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What Corona demands of us and what we can learn from the crisis

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For decades we have been used to exchange ideas at conferences, getting to know new things and people and forging one or the other alliance. Every meeting has a strong social component. Friendships develop and sometimes rivalries are fought. People travel and learn about other cultures in addition to medicine. This has now been taken from us by the pandemic.

After 9 months we feel more and more what we are missing. We all have the hope that everything will be as it was before. But like every crisis, this one also produces new opportunities and makes us bring in a period of reflection.

The possibilities of online formats have been around for years, but they have been neglected in favor of the physical events. Even in industry, it was common until the spring for managers to travel to numerous business meetings by plane. In these times of the climate crisis it is actually an anachronism. As an international specialist society, we are used to meeting and advising each other online. But of course, the joy is greater when we meet face to face. But what can we learn from the crisis? As scientists and teachers, learning should be very important to us.

When it became clear that there would be no physical meetings this year, virtual offers quickly came online. All professional associations have organized free organizations as substitutes. First and foremost, the IAGE from India, which brought colleagues around the world to the computers. All organizations live from the commitment of many individual members, but to create modern alternatives it is also necessary to maintain and create professional structures.

Last but not least, this means that they also have to generate income. In order not to completely depend on sponsors, membership fees, fees for congresses and workshops are required. Ultimately, new ways are needed to continue to offer content for members and to support further training.

The number of conferences and workshops has increased steadily over the past few years. In many regions of the world there is still a very high need for training and further education. In the industrial states in particular, societies are now competing for "customers". For medical doctors it has become difficult to offer the spectrum of gynecology in all its aspects.

Each sub-specialty offers accreditations and certifications (CME). You have to attend their conferences and take courses regularly in order to receive certificates. In some countries these are again required to carry out certain interventions. Above all, it is critical that very little of what is offered has really been scientifically evaluated.

That does not mean that only evaluated content can be conveyed. But if conclusions are drawn from health insurances or governments, we should think carefully about how we work on accreditations and CME's. Basically, we always have to ask ourselves how general the knowledge is that we pass on. Of course, surgery thrives on the transfer of experience. Ultimately, that's what creates the greatest tension at congresses. This is certainly where the success of the live surgeries and nearly live surgeries is generated.

I would certainly not want to forego this exchange, which is always very intensive in surgical workshops. But the many content offers for free of this year are often based solely on experience. As a surgeon, in my opinion, you should always look at yourself critically. One should look for the better way and never be completely satisfied. Even what you pass on should always be adapted to the listener. Much of what an expert can do is dangerous for patients in the hands of low volume surgeons and beginners! The presentation of studies and data is certainly less sexy than tips and tricks for a surgical procedure. However, a justification of the procedures is always mandatory and whoever evaluates his/her results will have found that the personal impression is sometimes wrong answer statistically.

Online content is easier to store and spreads quickly. This increases the pressure on the lecturers, on the one hand, not to repeat themselves and, on the other hand, not to argue in a scientifically unsound way. This may initially be perceived as stressful, but it can also be an opportunity for an increase in quality.

The new situation offers to the international specialist societies, in particular, the opportunity to modernize their approach. Of course, this requires many doctors to use new technologies. How do I compress videos that colleagues with a low download rate can also see them? How do I record my presentation or how do I send the large file over the internet? As we have seen, however, it works mostly well in the learning phase. Due to the sudden change, many providers will certainly develop better and better platforms.

What is the future:

Do we really have to go back to where we were at the beginning of this year? I personally don't want that. Of course, I would like to exchange ideas, meet and celebrate with others again. But the future should be hybrid. Therefore, we should partly meet on site and share our event globally via the internet. This saves costs, since smaller venues are sufficient and travel costs are reduced. In addition, this will help to reduce greenhouse gas emissions. The more we learn to use the new technologies for ourselves, the better we will be able to reach more people and let them participate. In order to enable colleagues with low incomes to take part in international congresses, the online format is a great asset.

The streaming technologies meanwhile also enable surgeons, who are not supported by industry, to show live surgery, which extends the spectrum and can also democratize the scene. Hence my wish to everyone, let's use this knowledge and shape the future. Using this crisis as an opportunity will certainly make it more bearable. The technical possibilities could bring us closer together, even if we will have a little more physical distance.

ISGE has set itself the goal of allowing as many doctors as possible to participate in the future of medicine. Supporters are always welcome. Stay optimistic.





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Defect Oriented Strategy Reducing mesh in pelvic floor surgery by laparoscopic approach

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Keywords: pelvic floor; native tissue; laparoscopy

As we look into history we see that pelvic floor reconstruction was built on native tissue repair since the introduction of anesthesiology in the middle of the 19th century until modern age [1]. Starting with pure shrinking, through tissue reduction and scar formation, strategies in the 19th century, like the Manchester approach or one step further the sacro-spinous fixation in the beginning of the 20th century. Ligaments were tied together or they were tightened as hard as possible. Besides the so called lateral defect repair (tightening of the lateral pelvic floor fascia) procedures like Mc Call sutures, Moszkowicz or culdoplasty were applied or are still in use[2-5].

From a scientific perspective these procedures are difficult to evaluate since there are no reliable data to be found as surgery was (is) generally authority based. In the sixties of the previous century Lane introduced the sacro pexy using an alloplastic transplant[6]. Due to this strategy a highly effective apical support was for the first time available. This approach still remains the "Gold-Standard" in pelvic floor surgery although scientific proof is not very impressive. Randomized prospective studies are rare, essentially numerous single-center, low powered studies (N below 100) are available. Furthermore, long term follow-up data are infrequent and the pure volume (n=50 – 100 cases) of small single center studies define the term "Gold standard".

In the late nineties of the previous century vaginal mesh-surgery was introduced and outplaced laparotomy but, in the process, did slow down the progress of the laparoscopic approaches. Due to the massive problems related to the vaginal mesh-surgery, a demand for alternative strategy is rising in Europe first followed by the rest of the world.

In England mesh is only allowed to be used under strict study conditions. New Zealand and Australia have nearly completely withdrawn the use of vaginal mesh. Numerus countries have regulated the use of mesh and lately the FDA

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forced the last mesh producing companies to withdraw their products from the market. Germany is one of the European countries without any regulation concerning mesh use but due to the latest EU directive for product security requesting study data for every single implant until 2021, things are bound to change. The diversity of implants will force the producers to reduce their port-folio as it will be impossible to **What about native tissue repair**?

The German guidelines for pelvic floor repair formulated by the German Pelvic floor Society (AGUB)

(http://www.awmf.org/uploads/tx_szleitlinien/ 015-006l S2e Descensus genitalis-Diagnostik-

Therapie 2016-11.pdf) analyzed 22 randomized studies regarding the anterior compartment. The variation in success rates is quite important and reaches 63% without and 67% with an additional apical fixation. In one long-term follow up 74% showed no new prolapse symptoms and only **7%** underwent a second surgery varying in time from 6 -18 years during the follow up.

Regarding the posterior compartment, treated by colporrhaphy, the outcome is even better and cumulative success rates of 80% were reported (12 months follow up /19 studies). The few studies related to lateral defect repair quote good data but these studies scientific standards are low[7].

Multiple studies use POPQ classification to describe the defect and the measurement of success. POPQ is an optimal labeling metric change and describes with precision the anatomical correction. Unfortunately, POPQ is not linked to the clinical outcome concerning the individual patient. The International Urogynecology Journal (IUJ) reported that this has led to an undervaluation of multiple approaches in the last decades [8]. Already in provide data for every single product. Apart from that surgeons have to ask themselves, "shouldn't we use as less mesh as possible?". Surgeons ought to focus on risks for the patients due to the different materials and above all look at the success rates of a procedure putting emphasis on minimizing I side effects related to a specific surgical strategy.

2011 the re-evaluation of a randomized trial comparing three different vaginal strategies was published in the American Journal of Gynecology and Obstetrics. The pure anatomical observation led to success rats 30-40%. After re-evaluation 8 years later the re-intervention rate was 1% and the clinical success rate related to satisfaction and wellbeing of the patients revealed close to 95%[9].

In summary it can be said that the traditional use of native tissue is underestimated. Unfortunately, the variation in surgical strategies does not allow to compare data. Multi-center studies are nonexistent and valid data i.e. dealing with dyspareunia or defecation disorders are rare. Certainly, in future the evaluation of clinical outcome should focus more on the clinical success rate and the risk profile of a specific surgical strategy.

What approaches are available?

Sacro-colpopexy is widely used and often Yshaped meshes are deeply positioned anteriorly and posteriorly to the vaginal wall for treating cystocele and rectocele in one and the same step. The opposite end is mainly fixed to the promontory, frequently by tackers. High success rates are reported but no convincing prospective multi-center trials are available [10-12]. De novo defecation disorders of 20% are tolerated as well as de novo Stress Urinary incontinence (SUI) of 10-50%. The use of Y-shaped meshes provides a



high stability of the vagina, however the expanded tissue is not adjusted nor brought in its natural functional position. These tissues are often very thin and widened. Suturing a mesh on these tissues and then pull the mesh to be anchored in the sacrum can cause erosion by shear-force of pulling. Cystocele and rectocele are generally no longer clinically visible as these tend to disappear after sacro pexy through the pulling which leads to a dislocation of the apex cranially resulting an elongated vagina still thin and wide and a dislocation of the urethra. This maneuver can lead to a decreased pressure transmission to the urethra. This in turn can possibly explain the high de novo incontinence rates reported in the studies.

If the sacro pexy or the pectopexy technique is only used for apical support, this requires concomitant surgeries to cure defects in other compartments. Our group has called this a "Defect Oriented Strategy" (DOS). This way of working bares the risk of underestimating defects with as result secondary de novo defects. On the other hand, as the re-intervention rates are low and the intention to avoid over therapy, it is easy to explain and communicate this strategy well to the patients.

Data of our group (n=247) show that the combination of a laparoscopic sacro-colpo-pexy with vaginal colporrhaphy (anterior/posterior) and/or laparoscopic lateral defect repair lead to a cure rate over 90% In a follow up period of 24 months. The re-intervention rate was below 2%. [13]. As mentioned above a successful apical support seems to be the basis of a high cure rate. The same data could be measured in a randomized, prospective trial (sacro-pexy versus pecto-pexy) published in 2015 [14].

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Abb.1: laparoscopic lateral defect-repair, strict extra-peritoneal approach.

The success of native tissue repair depends on the biological tissue conditions. Finally, the "scaring" of the tissue has to be sustainable to provide the desired attempted form. Our group does not have valid parameters to measure these optimal outcome conditions yet. When the patient presents with a prolapse the duration of the clinical symptoms, the thickness and size of the defect and a relapse, after previous correction, are possible variables which can help to decide if an additional artificial material is necessary or not. Research materials, used in basic tissue research, are tested at this moment in time which probably in the future will support natural recovery. There are no clinically relevant results reported at this moment in time.

To provide a scare-less surgery for the vaginal mucosa our group has developed a laparoscopic approach for anterior and posterior midline defect and enterocele. The technique enables the surgeon to reduce length or width adapted to the size of the defect under direct vision. If the use of mesh seems to be necessary its use can be combined [15]. This approach generates the advantage that tissues close to the mesh material is augmented. This decreases the risk of erosion. Additionally, as the vagina is not opened another risk factor for erosion (compared to vaginal



approach) is eliminated. The adjustment of vaginal length and width by a special laparoscopic suture technique, results in a more natural position of the vagina and can reduce negative side-effects like urgency and de novo incontinence. However, the defect-oriented strategy by combining multiple approaches is more sophisticated and time consuming.



Abb.2: enlarged thin vaginal fascia of a grade 2 cystocele.



References:

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Abb.3: Length reduction and augmentation of the fascial tissue by laparoscopic longitudinal sutures

Admittedly a sufficient apical support is carried out with support of mesh material. But the Defect Oriented Strategy (DOS) with targeted access to defect areas allows for a predominantly mesh-free surgery. Especially the laparoscopic approach allows the surgeon to approach all defects without generating scars in the vaginal wall. If the patient asks for a mesh-free strategy especially the young women with unclear desire for further children, a combination of native tissue techniques can be offered. Our group hopes to provide data in a very near future to formulate a clearer advice when a mesh is needed or when a native tissue strategy alone provides good long-term success.

In conclusion we can underline that native tissue repair builds an important base for pelvic floor repair. Laparoscopy provides for minimal tissue damage due to direct access to the defect. The use of artificial tissue in pelvic floor surgery should be considered very critically. To provide a comparable high quality in the long-term standardization of techniques multicenter studies a needed. The latter is also required to evaluate vaginal strategies.

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Uterine isthmus. Anatomy and hysteroscopy correlations for a separate entity.

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Abstract:

In hysteroscopy, 3 ostia are usually described as landmarks for the uterus, separating the cervical canal from the uterine cavity: external cervical os, internal uterine os and tubal ostia. However, in anatomy, two distinct internal uterine ostia are described: a histological os and an anatomical one. These define the uterine isthmic region.

In hysteroscopy however, the internal uterine histological os is the only one acknowledged to date, commonly termed *internal cervical os*.

In this paper, we present two case-reports demonstrating for the first time in the literature correlations between anatomy and hysteroscopy in the case of a normal and a pathological isthmus.

Key words: uterine isthmus; internal uterine histological os; internal uterine anatomical os.

Introduction

When performing a hysteroscopy, 3 ostia are usually described as landmarks to define two anatomical regions of the uterus: external cervical os and internal uterine os (IUO) – commonly termed internal cervical os (ICO) – delimitate the cervical canal, lined with a cervical mucosa. The IUO and tubal ostia mark the uterine cavity, lined with an endometrial mucosa.

The uterine cavity comprises 3 regions termed isthmus, corpus and fundus. The isthmic region is not clearly defined in hysteroscopy and is generally thought of as the entry of the uterine cavity, also termed the lower uterine segment (LUS), connecting the cervix to the corpus. Although its inferior limit is clear (ICO), the upper limit has never been documented in hysteroscopy. However, an additional fourth os has already been described in anatomy since 1905, namely the internal uterine anatomical os, consisting of a narrowing of the cavity, separating the LUS from the uterine corpus (1).

To our best knowledge, the latter ostium has never been demonstrated in the literature of hysteroscopy, as the ICO, anatomically termed internal uterine histological os, is the only one acknowledged to mark the lower boundary of the uterine cavity.



This work aims to provide a hysteroscopic demonstration of the LUS as anatomically defined, separating the histological os from the anatomical one, as the latter is clearly visible in some patients.

Case report 1: a 32 years old patient presented with a history of a nine years primary infertility. Diagnostic hysteroscopy demonstrated a clear isthmic region of less than 1 cm long, pathology-free, with a digitiform morphology, oriented to the left. The glands are scarce, and both histological and anatomical ostia are clearly identified, respectively marking transition from typical cervical mucosa to isthmic one for the histological os, and from isthmic mucosa to corporeal one for the anatomical os. The uterine cavity is triangular, with impaired inflammatory patterns (fig 1)

Case report 2: a 39 years old patient requested medical care for abnormal uterine bleeding. Hysteroscopy demonstrated a large LUS, well delimitated by both histological and anatomical ostia, significantly broadened by the presence of a 2 cm type 1 myoma as well as an Isthmocoele. The commonly named upper edge of the niche is actually the anatomical os of the uterus, rendered more visible by intra-isthmic pathology. In this patient, the uterine corpus and fundus did not display any particular lesions (fig 2) In both patients, histology was consistent with isthmic mucosa.

Discussion:

Both anatomically and histologically, the LUS is known to be different from the rest of the uterine cavity. Histologically speaking, it is well established that its endometrial mucosa is different from that of the corpus, as it is thinner, contains fewer, smaller and inactive glands. It displays decreased responsiveness to sexual hormones (1-3).

Anatomically, the LUS was first described by Aschoff in 1905 as a proper separate entity, subsequently accepted and quoted in the books of anatomy, defined as the region between two ostia (1): the lower one is the internal histological os of the uterus, initially termed os internum histologicum, point of transition from typical cervical mucosa to endometrial mucosa. This is the one commonly referred to in hysteroscopy. The upper one is the internal anatomical os of the uterus, originally termed os internum anatomicum. It consists of a narrowing of the cavity, more visible after a cesarean section as the upper margin of a niche, marking transition from the isthmic region to the corporal one. To our best knowledge, the latter ostium has never been hysteroscopically acknowledged to date

The distance between histological and anatomical ostia is anatomically described to vary from 2 to 10mm. It represents the LUS and has a digitiform morphology as described in anatomy (1, 4).

Conclusion:

Unlike what is commonly acknowledged in hysteroscopy, there are two internal uterine ostia: a histological os and an anatomical one, delimitating the LUS, which can be well individualized through hysteroscopy in some patients, especially in case of isthmic pathology. Hysteroscopists should be careful thereto. Morphology, orientation, size and eventual pathology should be meticulously noted in the procedure's report.

The author wants to thank Bruno van Herendael for his critical observations.



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Fig 1. Uterine isthmus in a 32 years old fertility-seeking patient. Red arrows: internal histological os; blue arrows: internal anatomical os. a: scope in the cervical canal; b: scope near histological os; c: scope inside isthmus, near anatomical os; d: panoramic view of the cavity through the anatomical os.

Figures:





Fig 2. Pathologic uterine isthmus in a 39 years old patient with abnormal uterine bleeding. Red arrows: internal histological os; Blue arrows: internal anatomical os. a: scope in the cervical canal; b & c: scope near histological os; d&e: scope inside isthmus; f: panoramic view of the cavity. M: Myoma; N: niche





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Fertility after hysteroscopy. Study conducted at the Pikine National Hospital Center.

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Abstract:

Objectives: To describe the indications for operative hysteroscopy as well as the results obtained concerning fertility.

Patients and methods: The study is a retrospective, descriptive study in the department of Obstetrics and Gynecology of the National hospital of Pikine (Dakar). The study does analyze all patients who underwent operative hysteroscopy during the period from January 1, 2017 to December 31, 2018. Data entry and analysis were done with EXCEL software.

Results: Most of the patients did consult for infertility (76.8%). Polyps (58.6%) and fibroids (56.6%) were the main preoperative findings. Followed by synechiae (five cases) and uterine septa (three cases). Cervical preparation with misoprostol was carried out in half of the cases and general anesthesia was performed in 98% of the cases. Resection with a bipolar loop was the procedure adopted for all cases. Operative laparoscopy for tubal infertility was associated with hysteroscopy in six cases. The average duration of the intervention was 70 minutes. One case of uterine perforation during cervical dilation has been observed. The hysteroscopy was technically possible without complications in 99% of the cases. Postoperatively, 18% of the patients did present with normal menstrual pattern and 47.3% had become pregnant.

Conclusion: A polyp or fibroid diagnosed in the uterine cavity should be treated by hysteroscopic excision if the patient presents with infertility.

Keywords: Hysteroscopy, Infertility, Polyp, Submucosal fibroid

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Introduction

Over the last twenty years operative hysteroscopy has become the Gold Standard in the treatment of intra-uterine pathology. Because of the specific learning curve this technique however is reserved for trained surgeons in an adapted surgical environment (1,2). Fertility problems is one of the indications for the use of the technique with the aim to improve the nidation of the embryo (3). The aim of this study is to evaluate the use of the hysteroscopique technique at the university affiliated tertiary reference center Pikine Notional Hospital Center.

Patients and methods

This is a retrospective study at the department of Gynecology and Obstetrics of the National Hospital Center Pikine a tertiary reference center affiliated to the Sheikh Anta Diop University, Dakar, Senegal. The study runs from the first of January 2017 through the 31st of December 2018. All patients (n=99) who underwent a hysteroscopy have been included in the study with the following parameters: married status, clinical and para-clinical data, surgical data, and results after surgery. The collecting and the analysis of the data have been accomplished with Microsoft Excel software.

Results

During the study period 14 % (n=99) of the patients underwent an operative hysteroscopy. The mean age of the patients resulted to be 36,8 years with a margin of 4 years from 27 to 45 years of age. Most of the patients did consult for fertility related problems (16.8%) and/or abnormal uterine bleeding (63.6%). The patient cohort of the nulligravidae represented more than half of the patient population (51.5%). C Section was the most frequent surgery in the clinical history (11%) followed by myomectomy (9%). 19.2% of the patients did report a miscarriage (Tab 1). Pelvic ultrasound did reveal polyps in 58.6 % and fibroids in 25.6 % of the

patients. The patients did present on average with 1,6 (range 0,6 med 2) submucous or intracavitary fibroids. The largest number found was three submucous or intracavitary fibroids. Hysterosalpingography (HSG) was performed in every patient presenting with fertility problems. This exam averred to be normal in 75.6 %. Tubal occlusion was diagnosed in 13 cases. In 79 of the patients HSG did confirm polyps in 51 cases and fibroids in 22.

	Frequency N = 99	Percentage %	
Age			
20-29 years	67	67.7	
30-39 years	29	29.3	
40-49 years	3	3	
Parity			
Nulliparous	59	59.6	
Primiparous	25	25.3	
Multiparous	15	15.1	
Consultation Patterns			
Infertility	76	76.8	
Menorrhagia	63	63.6	
Pelvic pain	31	31.3	
Pelvis mass	1	1.0	
Pathology			
Polyp	51	51.5	
Fibroma	40	40.5	
Synechia	5	5	
Uterine septum	3	3	

Table 1. Distribution of patients according to the reasons for consultation at the National Hospital of Pikine (Dakar)

Polyps have been resected in 51.5 % of the patients whilst fibroids in 40.4 %. In half of the patients a preparation of the cervix with 400 micrograms of misoprostol has been performed.



97 % of the patients did undergo general anesthesia. The duration of the hysteroscopy did score at 70 minutes with the shortest at 50 and the longest at 120 minutes. Operative hysteroscopy did vield satisfactory results in 99 % of the cases. As complications one uterine perforation during cervical dilatation has been observed and three episodes of peroperative bleeding. These bleedings have been resolved with adapted treatment. The postoperative period has been without complications with a medium of two days of hospitalization. Results have been collected during or the post-operative visit at the fertility clinic or during a telephone follow-up. The mean follow-up has been of one year. During that period 18 % of the patients regained a normal menstrual pattern. Pregnancy did occur in 47 patients: nine spontaneous pregnancies and 37 after ovulation induction and one after in vitro fertilization and embryo transfer (IVFET) (Tab 2).

	Frequency N = 99	Percentage %
Stopping menometrorrhagia	18	18
Spontaneous pregnancy	9	9
Pregnancy after ovulation induction	37	37.3
Pregnancy after in vitro fertilization	1	1
Lost to follow-up	34	34
Total	99	100

Table 2. Distribution of patients accordingto the results of operative hysteroscopy atthe National Hospital of Pikine

Discussion

The frequency of the operative hysteroscopy procedures in our study (14%) is lower than reported in European studies (1,2). Operative

hysteroscopy is indeed less accessible in our region. Only few hospitals are able to provide for the technical set-up and only few gynecologists perform the technique on a regular basis. As an example, until 2020 operative hysteroscopy was only possible in two out of 14 regions of Senegal (Dakar and Ziguinchor). The costs remain quite high for the patients who have to undergo the treatment. Infertility being the main motivation for the patient to undergo the treatment. In a previous study at our department it was established that intra uterine pathology did account for 41.8 % of the causes for infertility (4).

The rules that allow the medical community to establish protocols for the diagnostic procedures are set by the scientific societies. These rules allow our group to work safely and efficiently. In 1991 the General Assembly of the CNGOF recommended HSG as a first exam whereas Trans Vaginal Ultrasound (TVS) was ruled to be a diagnostic tool of the second line (5). Our group argues for TVS to become a primary investigational tool for the exploration of female infertility in the different regions of Senegal. One key argument is that TVS is less costly and can be performed by a larger number of physicians. As a reminder it can be stated that TVS performed in conjunction with HSG in the study at hand did diagnose polyps in 58.6 % and fibroids in 56.6 % of the patients.

Indication for operative hysteroscopy in this study have been the diagnosis of polyps and fibroids this tendency is corroborated by most of the published studies (6,7,8). The time needed to perform operative hysteroscopy in this study was 70 minutes and is high when compared to studies in the literature (9). The explanation could be the average number of fibroids of 1,6 in median found in this study and also by the fact the operative hysteroscopies have been linked to laparoscopies in certain patients. One case of uterine perforation has been reported in the study. Some authors do report delayed complications like uterine ruptures during pregnancies after operative hysteroscopy (10, 11).



The results have been satisfactory with a stop of abnormal uterine bleeding in 18 % of the patients and a pregnancy rate of 47.3 %. There are reports that pregnancies in patients after hysteroscopic surgery have the same evolution as in patients with a normal uterine cavity (9). One of the patients did have an IVFET treatment resulting in a pregnancy with normal childbirth at term. In IVFET authors do suggest that diagnostic hysteroscopy eventually followed by operative hysteroscopy is indicated after two failures of implantation or after a difficult embryo transfer. Others claim the hysteroscopy should be performed before attempting IVFET (9).

Conclusion

Hysteroscopy has become the gold standard for diagnosing and treating most of the benign intrauterine pathologies. This study is a further proof that this method is important in treating infertility.

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TheTrocar Issue 1 2020 / Page (12-18)

Laparoscopy Myomectomy for Submucous Fibroid in Patient with Previous 3x Caesarean Section

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Abstract

Background: The most frequent benign tumors in females are fibroids which are muscular and classically seen throughout the middle and later fertile years of reproductive cycle. These tumors usually arise from the smooth muscle layer of the uterus. The surgical option for submucous uterine fibroid is either myomectomy or hysterectomy, but nowadays when women have the freedom to choose, we can offer the best for them.

Cases Presentation: Submucous uterine fibroids tumors are the fibroids situated on inner side of the uterus under the inner lining of the uterine cavity. This type of fibroid usually appears as a single fibroid. Transvaginal Saline infusion sono-hysterography finding showed massive soft tissue mass with diameter 6,2 cm II Submucous fibroid >50% uterine wall invasion originating from uterine cavity type. This article demonstrates a case of a 42-year-old premenopausal lady diagnosed heavy bleeding with painful mass in lower abdomen with pain, gradually increasing abdominal size with speedy growth in the past 6 months connected with difficulty of breathing and significant anaemia. The Lasmar's pre-surgical score is 8, so an alternative approach non hysteroscopy technique, the laparoscopy myomectomy is considered.

Conclusions: Surgical excision of fibroid tumor was done. Post operatively patient recovery was uneventful.

Keywords:Premenopausal / Saline infusion sono-hysterography Myomectomy / Submucous uterine
fibroids / The Lasmars / Uterine wall invasion

Introduction

Uterine fibroids or Leiomyoma also known as fibroid tumors are a major cause of morbidity

in women of a reproductive age [and sometimes even after menopause] which usually arise in the uterus [1].

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Even though they are structurally made of the smooth muscle fibbers which the structural fibbers of the uterine wall; however, fibroids fibbers are usually considerable thicker than normal myometrium of uterine wall. These benign tumours are usually round shaped. These fibroids frequently are usually restricted to the outer layer of the uterus. Some tumours known as submucosal fibroids tumours are situated on inner side of the uterus under the inner lining of the uterine cavity. [2]. Clinical studies have confirmed that myoma of uterus can cause infertility and anaemia, and even threaten the life in severe cases.

The results of a survey for patients with submucous myoma of the uterus showed that the disease can have a greater impact on the fertility and menstrual status of patients, and cause infertility, haemorrhagic anaemia and other symptoms. [3]. They are found in nearly half of women aged over forty; the incidence increases during the reproductive age and decreases after menopause. The most likely presentation of fibroids is by their effect on the woman's menstrual cycle or pelvic pressure symptoms [4]. The submucous uterine fibroids that carry no symptoms are sometimes not given any treatment until and unless no critical emergency situation arises. However, large submucous uterine fibroids often create surgical difficulties as it grows as a huge fibroid mass [5]. The surgical option for submucous uterine fibroid is either myomectomy or hysterectomy, but nowadays when women have the freedom to choose the right choice the procedure we can offer them the best treatment. [6]. A wellmanaged and interesting case of a fibroid uterus is presented here.

Case report

A 42 year-old woman with 3 previous Caesarean Section, presented in a Anugerah Women & Children Emergency Ward with heavy bleeding and painful lower abdomen. She was presented with clinical history of serial blood transfusion and very low count of Fe Serum level. Regarding the menstrual history, menarche was at 13 years old and she noticed menorrhagia since 6 months ago with regular blood transfusion.

On physical examination, she was severely anaemic and had a grossly visible large mobile uterus size. On pelvic examination, she had a posteriorly displaced cervix with no lesions or inflammation. Her shortness of breath was likely due to the elevated diaphragm and severe anaemia. Her haemoglobin level was 6.2 gm/ dl. Transvaginal ultra-sonographic in saline finding (Fig 1) showed massive soft tissue mass with diameter 6,2 cm originating from uterine cavity as type II submucous fibroid (FIGO Classification). With 3 Dimension Ultra-sonographic in saline showed that type II Submucous fibroid >50% uterine wall invasion (Fig 2).



Fig 1 : Submucous Fibroid extended 2/3 of the uterus



Fig 2 : The massive soft tissue mass with diameter 6,2 cm originating from uterine cavity





According to these Transvaginal Ultrasound we did a scoring system with Pre-Surgical score of Lasmar. From the Lasmar's Pre Surgical Score, we found that the size of fibroid is > than 5 cm, sitting on the medium of the uterus extending more than 2/3 of uterus and penetrated > 50% of the myometrium. We found that the pre surgical point is 8 [consider an alternative approach to hysteroscopy technique] with adhesion area in different regions due to the previous 3x caesarean section (Fig. 3). During consultation with her and her husband, myomectomy is the recommended treatment of uterine fibroids in women aged 40 years and above with infertility and who wish to become pregnant.



Fig 3. The bladder adhesion due 3x previous caesarean section

If there is no need for further fertility preservation, hysterectomy should be offered, but she still insist for preserving the uterus because their wishes and faith. Then we plan myomectomy procedure for her. After correcting anaemia with 3 pints bags of packed cell 1 day before surgery, a laparoscopy myomectomy was done with HD 3 chip Laparoscopy integrated System (MAXER[™]). Uterus was hugely enlarged tightly occupying whole abdomen. Uterus was adherent posteriorly to the sacrum, occupying whole of the pelvis with restricted mobility. Midline uterus incision was given. Fallopian tubes and ovaries could not be reached. A single mass of fibroid tumour was removed from uterus. (Fig. 4). Although bleeding was average, one pint of blood transfusion was given during operation.



Fig 4. A Single mass fibroid sitting deep down the middle of 2/3 uterus

Histopathology showed leiomyoma (Fig 5). After securing the bleeding from tumour bed, we did a reconstruction of the uterus with 1.0 Knotless Tissue Control Suture (STRATAFIX[™]) (Fig 6). We morcellated the fibroid with Cordless Laparoscopic Morcellator (LiNA Xcise[™]) from the centre camera port.



Fig 5. A confirmed leiomyoma form the histopathology result



Fig 6. Laparoscopy reconstruction of the uterus with 1.0 Knotless Tissue Control Suture



Discussion

Myomectomy has become a commonly performed surgical procedure in recent years as more women desire conservation of their uterus in the presence of symptomatic uterine fibroids [7]. The results of a survey for patients with submucous myoma of the uterus showed that the disease can have a greater impact on the fertility and menstrual status of patients, and cause infertility, haemorrhagic anaemia and other symptoms [8]. These fibroids most often result in irregular menstrual cycles, pain in pelvic region, and exerts pressure symptoms on adjacent tissues and organs [9].

Although the incidence rate of submucous myoma of the uterus is only 5–10%, it can cause more serious clinical symptoms, mainly including excessive menstruation, prolonged menstrual period, shortened menstrual cycle and dysmenorrhea, which can also lead to secondary anaemia and infertility. They may be fatal in some cases when pressure effects involve the urinary bladder, ureters and other neighbouring organs [10].

Management of a patient with uterine fibroids is highly dependent on the presentation and patient wishes. In many cases, the management of the fibroids carries surgical risks, and in some women, the fibroids with symptom on Premenopausal age are best left alone. Women without symptoms who have small fibroids but are close to menopause or who are trying to conceive should be offered conservative treatment with analgesics and haematinics. Saline infusion sono-hysterography based imaging is usually used as a supplementary or adjunct imaging modality for characterization of focal uterine masses diagnosed on B-mode ultrasound images.

During transvaginal ultrasound, a uterine mass may appear as an area of increased echogenicity bulging into the endometrial cavity with echogenicity similar to that of the myometrium [11]. Saline infusion sonohysterography is also effective in distinguishing diffuse endometrial changes and focal intracavitary protuberances. However, it is limited in its ability to differentiate between endometrial hyperplasia [premalignant polyps] and endometrial carcinoma [12]. The quality of the image obtained is dependent on the amount of deformation induced by the saline injection into the uterine cavity. If the amount of saline injected is too low, the deformation induced is too small to provide images with a reasonable signal-to-noise ratio.

This situation has led to generation of suboptimal strain images in some instances because of the minimal deformation of the tissue. The amount of deformation applied via saline injection is dependent on the ability of the patient to tolerate the discomfort induced due to saline injection into the uterus; in other cases, insufficient deformation is due to the presence of saline from a previous infusion and the inability to withdraw sufficient fluid before starting a new infusion [13]. In this case, the treatment possibility to treat this fibroid from patient who still want to preserved the uterus is Laparoscopy myomectomy procedure [14].

The case presented here indicates that the myoma was deep down uterine wall invasion transmural. After removal of the myoma of uterus, fallopian tubes and ovaries were visualized, both ovaries were normal. After surgery, she had at first no symptoms, so patient herself enjoyed expectant management. Medical management GnRH analogues are commonly used before myomectomy to make surgery easier and safer, but in this emergency case, in which the patient is suffering with pain, heavy bleeding and anaemia (haemoglobin 6.2 gm/dl we procced to do surgery without GnRH therapy [15]. Even fast developing lumps may not be excised as routinely practiced because the possibility of a malignant leiomyosarcoma is very rare; only 0.23 percent has been reported in one study [16].



The procedure for myomectomy in premenopausal women should be focused towards improvement in symptomatic relief and quality of life of patient who desire to retain their uterus; proper counselling and probability of myomectomy are suggested in patients carrying symptomatic fibroids as well as in those patients with huge, asymptomatic fibroids [17]. If the GnRH analogues medical treatment continue for long time, it is usually connected with extraordinary cost, weakness of bone due to demineralization, high risk of recurrence and menopausal symptoms [18]. Negligence of women's reproductive health, perpetuated by law, is part of a larger, systematic discrimination against women.

Laws obstruct women's access to reproductive health services. Laws protecting of women's reproductive health are rarely or inadequately implemented [19]. With Pre-Surgical Lasmar Score more than 8, a laparoscopy surgical management was needed. An exploratory and adhesiolysis laparoscopy was the only method available due to the size and location of the mass. Laparoscopic myomectomy for large submucous myomas is a technically feasible procedure. It can be performed by experienced surgeons irrespective of the size or depth of the myoma [20]. The risk of massive blood loss specifically due to increased vascularity of the tumors is the major technical hazard of surgical removal of large uterine fibroids [21].

Conclusion

A woman's experiences after hysterectomy symptom such as severe vaginal dryness and decreased libido are common and important considerations of the menopausal transition; they are the main issued women avoid hysterectomy and choose to preserved their uterus. In order to avert the complications like an incomplete excision, we perform laparoscopic myomectomy for patients with large submucous fibroids more than 5 cm.

The presence of a submucous fibroid larger than 4 cm and with an intramural extension greater than 50%, laparoscopic rather than hysteroscopic myomectomy can be performed for the sake of safety and, if needed, for the concomitant removal of fibroids of a non submucous type. However, this particular approach should be performed only by surgeons skilled in laparoscopic suturing. Recurrency for Submucous fibroid is very low due the decline in ovarian function toward the later part of the reproductive age and the consequent hypoestrogenic state that ensues.

Information

• Abbreviations

FIGO: Federation International Gynaecology and Obstetrics GnRHa : Gonadotrophin Releasing Hormone analogue

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- Authors' contributions
 Indra Adi Susianto performed the surgery as a main surgeon, and Hervyasti Purwiandari as a second surgeon. The manuscript was prepared by Indra Adi Susianto. All authors read and approved the final manuscript
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• Ethics approval and consent to participate

The privacy of the patient was considered, and the manuscript does not include any identifying information.

Consent for publication

Informed consent for publication



of the patient's clinical data and the accompanying images was obtained from the patient. Competing interests
 The authors declare that they have
 no competing interests.

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TheTrocar Issue 1 2020 / Page (19-24)

Primary umbilical endometriosis with menstruation from the umbilicus: a case report and review of the literature

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Abstract

Background: Primary umbilical endometriosis (PUE) is a rare disorder and is defined as the presence of ectopic endometrial tissue within the umbilicus. Extra pelvic presentations in almost all parts of the body have been reported in the literature. However, umbilical endometriosis that is spontaneous or secondary to surgery is uncommon and accounts for only 0.5% to 1% of all endometriosis cases.

Case presentation: A patient with painful mass in the umbilicus during menstrual period is studied in this paper. A 40-year-old African woman presented with painful umbilical mass that bleeds during periods of menstruation. Clinically her umbilicus had a vivid colored mass tender on examination. An ultrasound was performed which revealed a 32mm soft tissue echogenic nodule. It was followed by Contrast Enhanced Computed Tomography (CECT) of whole abdomen to make a possible diagnosis of umbilical endometriosis. The possibility of subcutaneous endometriosis should be considered when an umbilical mass is detected despite the absence of previous surgery. The patient underwent a wide local excision of the nodule and surgical exploration revealed a subcutaneous dark colored lobulated swelling at the umbilicus. Histopathology confirmed the diagnosis of umbilical endometriosis. The patient was asymptomatic at 3 month and 6-month follow-up, but nevertheless warned of the risk of recurrence.

Conclusion: Primary umbilical endometriosis is a rare, benign and under-recognized phenomenon. Pelvic endometriosis is a common condition, but the diagnosis of PUE is difficult. This case highlights the importance of including PUE in the differential diagnosis of women with a painful umbilical nodule. Complete excision with successive histology is recommended for obtaining a definitive diagnosis and optimal treatment.

Keywords: Contrast Enhanced Computer Tomography / Endometriosis / Primary Umbilical Endometriosis



Introduction

Endometriosis, a term first used by Sampson, is the presence of endometrial glands and stroma outside the uterine cavity and musculature [1]. It is a benign disorder, which affects 6-10% of all women in the reproductive age group [2]. It commonly occurs in the pelvic organs, especially the ovaries, the uterosacral ligaments and the pouch of Douglas. Endometrial implants maybe categorized as cystic, mixed or solid, with cystic implants being the most common[3]. Women with endometriosis often present with dysmenorrhea, menorrhagia, pelvic pain and infertility.

Extragenital endometriosis is less common, but has been described in almost every area of the female body including the bowel, bladder, lungs, brain, umbilicus, and surgical scars [4]. Due to its varied presentations, endometriosis remains a difficult condition to diagnose and treat. Anterior abdominal wall endometriosis in patients with no surgeries is rare [5]. prior Umbilical endometriosis represents 0.5% to 1% of all cases of extragenital endometriosis. It usually occurs secondary to surgical scars, but very rarely presents as PUE [6,7]. We report one such rare case of spontaneous, PUE.

Case presentation

A 40-year-old healthy African parous woman presented with a painful and vivid colored nodule in the umbilicus which gradually evolved over the past 8 months. She had cyclical umbilical pain and bleeding from the umbilicus. The bleeding would start two days before her menses and continue for the entire duration of her period. It was accompanied by pain and swelling in the umbilical area. The patient had regular, heavy and painless menstrual periods and did not wish for any treatment for such.

She had two previous spontaneous vaginal deliveries. She was not using any form of hormonal contraception. Her medical history was not significant and she never had any

abdominal surgeries. Clinical examination revealed that the patient has a 4×3 cm dark coloured soft-firm nodule involving whole of the umbilicus (Figure 1). It was not reducible by gentle digital pressure. She then underwent an ultrasound scan that showed a 32 mm complex soft tissue echogenic, predominantly hypoechoic lesion at the umbilicus, approximately 5 mm below the skin surface (Figure 2a,b,c). She was then taken for CECT abdomen to look for intraperitoneal communication and other sites of endometriosis (Figure 3). The key clinical feature that led to the correct diagnostic hypothesis of umbilical endometriosis was the temporal association of the bleeding from the umbilical nodule with her menstrual period.



Fig.: 1



Fig.: 2a hypoechoic lesion at the umbilicus



Fig 2b hypoechoic lesion at the umbilicus







Fig.: 3 CECT abdomen

The patient was offered surgical management as she had taken some medical treatment in her home town back in Africa which did not solve her problem and the swelling continued to persist. The risk of recurrence and scar endometriosis were explained to her. The patient successfully underwent excision of the nodule with accompanying umbilical reconstruction. confirmed Histology the diagnosis of endometriosis and revealed the presence of endometriotic glands with mucinous type metaplasia and extravasation of the mucinous secretion into the adjacent stroma (Figure 4a,b,c).



Fig.: 4a



Fig.: 4b



Fig.: 4c

No epithelial atypia was seen and the excision appeared complete. The patient was seen six weeks after the surgery and found to be asymptomatic with a normal umbilicus.

Discussion

Endometriosis is a benign disorder, which affects 6-10% of all women in the reproductive age group [2]. The umbilicus could be an extraordinary site of endometriosis and is affected in 0.5-4% of women with endometriosis [8]. Umbilical endometriosis was first described in 1886 and since then more than 100 cases have been described [6]. Majority of these cases occurred secondary to surgical, commonly laparoscopy, scars.

In English literature, only 37 cases of PUE have been described [8]. An umbilical endometriotic



lesion without surgical history is a rare condition [6,7]. Some case reports have also described the presence of umbilical endometriosis during pregnancy [9]. There has been great speculation about the pathogenesis of this phenomenon and several theories have been proposed. Latcher has classified these theories into three main categories: a) the embryonal rest theory, which explains endometriosis adjoining the pelvic viscera by Wolffian or Müllerian remnants [6,7]; b) the coelomic metaplasia theory, which states that the embryonic coelomic mesothelium dedifferentiates into endometrial tissue under stimulus such as inflammation or trauma [10];c) and the migratory pathogenesis theory, which explains the dispersion of endometrial tissue by direct extension, vascular and lymphatic channels, and surgical manipulation. Still others suggest cellular proliferation of endometrial cells from initial extraperitoneal disease along the urachus [11,12]. The real mechanism still remains a mystery. The most widely accepted theory however is that endometriosis results from metastatic implantation from retrograde menstruation [Figure5a,b]-[13Umbilical endometriosis patients are usually in the reproductive age group and present commonly with swelling, pain, discharge or cyclical bleeding from the umbilicus.

There may be associated symptoms of coexistent pelvic endometriosis These lesions are usually bluish-black in colour and become painful, larger and bleed about the time of menses. They range in size from 0.5 cm to 3 cm, but can enlarge to even more enormous sizes [6]. While the diagnosis is primarily clinical, Ultrasonography (USG), Computed Tomography (CT) and magnetic resonance imaging (MRI) can be useful in evaluating patients with suspected endometriosis.

Adnexal/pelvic endometriomas appear as cystic masses with low level internal echoes. However non-adnexal endometriosis has non-specific USG features in the literature; lesions maybe multicystic, solid or mixed cystic and solid [20]. The pattern of echogenicity is thought to be related to the amount of distribution of haemorrhage and fibrous tissue components [21]. Most non adnexal endometriosis shows vascularity at color Doppler USG as multiple dilated feeding vessels at the periphery of the mass or single vascular pedicle. Often internal vascularity is seen as in our case.

These vessels show low velocity flow. At (CT), anterior abdominal wall endometriosis may be non-specific but it typically appears as a solid tissue mass with mild to moderate enhancement after the administration of intravenous contrast material[3]. On MRI, endometriosis is homogeneously hyperintense on T1-weighted sequences [14].

Histological findings are characterized by irregular glandular lumina embedded in the stroma with a high cellular and vascular component resembling the stroma of functional endometrium. A fairly recent study has suggested a distinctive dermato-scopic feature in cutaneous endometriosis — that of comprising small red globular structures called 'red atolls' [15].

Other causes of painful swelling in the umbilicus are shown in Table 1 [8].

Surgical excision of the lesion with sparing of the umbilicus is the preferred treatment of Umbilical endometriosis [10] In severe cases or in the presence of pelvic endometriosis, hormonal therapy in the form of danazol or GnRH analogues can be given to the patient [16]. In our case the lesion was excised and histology confirmed the diagnosis. Although simultaneous laparoscopy has been recommended for pelvic endometriosis, this was not done because our patient was asymptomatic. Although local recurrence is uncommon, the patient has been warned of the risk of scar endometriosis and of recurrence. The risk of malignant transformation from umbilical endometriosis is very low. Only two cases of umbilical endometriosis with malignant transformation have been reported thus far [17]. Lauslahti first reported a case of



adenocarcinoma of umbilical endometriosis in 1972 [18]. Obata et al. Also described a patient with endometriosis adjacent to a clear cell carcinoma that transformed into a carcinoma from the endometriosis at the umbilical lesion [19]. In summary, Endometriosis is a common gynaecological disease; however, primary umbilical endometriosis is a very rare and underrecognised phenomenon. Making a diagnosis is difficult and other causes of umbilical lesions should be considered.

Surgical excision is the standard treatment of this condition. By increasing the awareness of PUE as a potential diagnose of painful discoloured umbilical swelling, we hope this condition will be recognised and treated optimally.

Other information

ABBREVIATIONS: USG: Ultrasonography, CT: Computed Tomography, PUE: Primary umbilical endometriosis, MRI: magnetic resonance imaging; GnRH: gonadotropin releasing hormone.

CONSENT: Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-chief of this journal.

COMPETING INTERESTS: The authors declare that they have no competing interests.

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Benign	Malignant		
Cutaneous endometriosis/endosalpingiosis(the presence of fallopian tubelike epithelium outside of the fallopian tube)	Sister Mary Joseph node (palpable nodule bulging into the umbilicus as a result of metastasis of a malignant tumour in the pelvis or abdomen)		
Haemangioma/vascular malformation	Melanoma		
Umbilical hernia/cicatricial hernia	Sarcoma		
Sebaceous cyst	Adenocarcinoma		
Granuloma	Lymphoma		
Lipoma			
Abscess			
Keloid			
Omphalomesenteric or urachus anomaly and/or infection			
Desmoid tumour			



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Intra-ovarian direct trocar penetration and drainage for access prior to laparoscopic surgery for giant ovarian cyst

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Abstract

Objective: to report three successful cases in 2017 using a method of intra-ovarian direct trocar penetration and drainage for access prior to laparoscopic surgery in the case of giant ovarian cyst.

Methods: We reported three case series of patients diagnosed with giant ovarian cysts who underwent direct trocar penetration to the cyst and drainage for access followed by laparoscopic cystectomy. All of these patients had no history of previous laparotomy. The size of the cysts was more than 25 cm in diameter each. To exclude malignancy, transabdominal and transvaginal ultrasounds using the International Ovarian Tumor Analysis (IOTA) criteria and laboratory test including tumor markers were performed prior to surgery. The intraovarian direct trocar penetration and drainage technique was performed by penetrating a 5-mm trocar at the Palmer point site directly into the cyst followed by fluid drainage. This procedure was then followed by laparoscopic cystectomy, partial oophorectomy and unilateral oophorectomy, respectively.

Results: In one case, the cyst's fluid was found to be serous with approximately 3.100 ml in volume. In the other two cases, the cyst's fluid was thick-dark brownish color as of an ovarian endometrioma with approximately 3.000ml and 3.250ml in volume respectively. There were no complications found following the procedure. After the surgery, all patients were hospitalized for two days. Histopathologic findings of the cysts were benign. In the outpatient clinic, the follow-up after the procedure showed patient's complete recovery, pain free and were back to daily activity soon afterward.

Conclusion: Intraovarian direct trocar penetration and drainage for access prior to a laparoscopic cystectomy procedure in the case of giant ovarian cyst procures great benefits for the patients with less complications, less time required to full recovery and also less pain experienced. The procedure is safe, applicable, reliable and effective in the management of benign giant ovarian cyst in patients with no history of laparotomy.

Keywords: Direct trocar insertion / Drainage / Giant ovarian cyst / Laparoscopic cystectomy





Introduction

Ovarian neoplasms are a common clinical problem affecting women of all age groups. These are considered as a the fourth most common reason for gynecologic recoveries in the United States, and it has been estimated that approximately 10% of women in the United States will undergo a surgical procedure for a suspected ovarian neoplasm during their lifetime (1).

The definition of huge ovarian cysts is not well described in the literature. Some authors define large ovarian cysts as those that are more than 10 cm in diameter as measured by preoperative scans (2). Others define large ovarian cysts as those that are reaching above the umbilicus (3).

Laparoscopy is considered the gold standard approach to manage benign ovarian cysts. The benefits of laparoscopy include reduced postoperative analgesic requirement, earlier mobilization reducing chances of deep venous thrombosis (DVT), cosmetic advantages, earlier discharge from the hospital, and return to normal activity. A major factor that will make the gynecologic surgeon decide to perform a laparotomy is the size of the ovarian mass (4).

We propose and describe three cases of the technique of intra-ovarian direct trocar penetration and drainage straight into the giant ovarian cyst. The procedure were undertaken for the purpose of creating access prior to laparoscopic surgery. All of these procedures were performed during the period of January to May 2017. As far as our knowledge, this technical approach of direct trocar penetration and drainage straight in to the cysts have not been reported in the previous study.

Case report

A 31-year old nulliparous woman came to the hospital due to a huge abdominal cystic mass extending from the symphysis pubis to the epigastric region (figure 1). The patient was also

experiencing nine years of primary infertility. Pre-operative diagnostic examination was performed by abdominal ultrasound scanning and findings describe a giant cystic unilocular mass of 25x12x12x25cm with acoustic shadowing and no signs of blood flow on the color dopler examination. The diagnosis for this patient were right giant ovarian cyst and uterine fibroid.



Figure 1. Huge abdominal cystic mass extends to epigastric region

Second case reported is a 41-year old nulliparous woman admitted to our department on January of 2017 with as main complaint an enlargement of the abdominal circumference and a huge ovarian cystic mass (figure2). Patient was experiencing 11 years of primary infertility. Prior to the surgery the transvaginal ultrasound scanning revealed a giant unilocular cystic mass on the right ovary with the size of 25X12X25X12 cm with internal echo's or ground glass appearance and no signs of blood flow in the mass. The laboratory work-up was normal including the tumor markers of CA-125 at 64. The diagnosis was established as right ovarian endometrioma with primary infertility of 11 vears.



The third case is a 35-year old nulliparous woman who presented at our Fertility and Reproductive Endocrinology Division in the Department of Obstetrics and Gynecology with a giant abdominal cystic mass in May 2017. The patient has been married for ten years with primary infertility. The mass was measured from symphysis up to one cm above the procesus xiphoideus of about 27X14X27X14 cm. The ultrasound scanning showed a huge cystic unilocular mass on the left ovary with acoustic shadowing and no blood flow. The laboratory finding was within normal limits. The working diagnosis was giant left ovarian cyst with the primary infertility of ten years.





Figure 2. Giant ovarian cystic mass extends to the epigastric region Transvaginal ultrasound and preoperative appearance of giant ovarian cystic mass

Methods

The patients were brought under general anesthesia, the procedure was started by performing the puncture at Palmer's point site using a five mm trocar directly into and through the cyst's wall. Followed by opening the "stopcock" and checking the flow of the drainage. The extraction of the trocar's obturator was followed by an immediate fluid drainage. Some 3.100ml of serous fluid was drained from the cyst. Following this step, we proceeded to the standard operative laparoscopic procedure starting with Veress needle insertion intraumbilically followed by drop test and installation of the pneumoperitoneum afterwards. A ten mm trocar was inserted through the umbilical incision as a main channel followed by the telescope. The procedure was continued by inserting one other five mm trocar laterally to the midclavicular line along side of the previous Palmer's point used as the working channel for the operator. In the first case reported, we performed unilateral salpingo-oophorectomy, myomectomy followed by a chromotubation test showing that both right and left salpinges to be open. The histopathological finding showed nonpapillary serous cystadenoma as the postoperative diagnosis. The patient was discharged from the hospital 24 hour after the procedure.

In the second and third case, the procedures were initiated the same way as in the previous case reported. The procudre did start with the direct trocar penetration into the cyst. A thick brownish liquid drained out from the cysts at the amount of 3.000ml and 3.250ml respectively. The procedure was subsequently followed by the standard laparoscopic surgery as described previously. For the second case the laparoscopic



procedure performed was unilateral partial oophorectomy while left salpingo oophorectomy and cystectomy was performed on the third patient. The histopathologic report in both cases revealed endometriosis. The length of stay of the patient in the hospital was two days. On the outpatient clinic follow-up, the patients showed a complete recovery.

Discussion

The largest ovarian tumor ever weighed 1.374 g and was removed intact in 1994 by O'Hanlan (5). In pediatric surgery we usually deal with much smaller abdominal masses. Ovarian cysts are labelled as large when they are over five cm and giant when they are over 15 cm (6). In children, however, it is better to compare the size of the cyst to the size of the peritoneal cavity. Some authors have defined giant ovarian cysts as those reaching above the level of the umbilicus (7). We strongly agree with this statement.

The detection of Ovarian cyst does cause considerable concerns for the women because of the fear for malignancy but it is an established fact that many ovarian tumors present as cysts, but all cysts are not tumors. Serous tumors are the most common cystic neoplasm of the ovary, 60% of which are benign, 25% are malignant, and 15% are borderline cases. Serous tumors usually present as large masses, up to 40 cm in diameter. The vast majority of mucinous tumors are benign (75%), 10% borderline, and 15% carcinomas. (8).

In our study, we used the criteria of consensus of the International Ovarian Tumor Analysis (IOTA) group (2000) to define terms, definitions, measurements on the sonographic features of adnexal tumors. The categories defining the adnexal mass, to be evaluated in the procedure, were the form of the lesion, its morphological features- qualitative and quantitative – and in the end to come to morphologic endpoints by B- mode imaging and end-points of vascularity and blood flow by color Doppler imaging (9).

As described in the IOTA group consensus, the five simple rules to predict malignancy (M-rules) were applied. For the ultrasound investigation of benign tumors, five simple rules were also suggested. By using these criteria, the IOTA group reported a sensitivity of 93%, a specificity of 90%, a positive likelihood ratio (LR+) of 9.45 and a negative likelihood ratio (LR-) of 0.08 (9).

Table 1. IOTA Group ultrasound rules to classify masses as benign (B-rules) or malignant (M-rules)

B-rules	M-rules	
Unilocular cysts	Irregular solid tumor	
Presence of solid components where the largest solid component <7mm	ascites	
Presence of acoustic shadowing	At least four papillary structures	
Smooth multilocular tumor with a largest diameter<100mm	Irregular multilocular solid tumor with largest diameter>100mm	
No blood flow	Very strong blood flow	

Rule 1: If one or more M features are present in absence of B feature, mass is classified as malignant.

Rule 2: If one or more B features are present in absence of M feature, mass is classified as benign.

Rule 3: If both M features and B features are present, or if no B or M features are present, result is inconclusive and second stage test is recommended.

As far as the tumor marker examination is concerned our literature study concluded that the serum of CA-125 assay has not to be undertaken in all premenopausal women when



an ultrasonographic of simple ovarian cyst has been made. Lactate dehydrogenase (LDH), α -FP and hCG should be measured in all women under age of 40 with the complex ovarian mass because the possibility of germ cell tumors (10).

Table 2. Tumor markers test in correlation withovarian neoplasms

Tumor markers	Histopathological findings
CA-125	Epithelial ovarian tumor
CA-19-9	Mucinous epithelial ovarian tumor
LDH	Dysgerminoma
AFP	Endodermal sinus tumor
hCG, hPL	Choriocarcinoma, PSTT
Inhibin A	Granulosa cell tumor

CA-125 is elevated :

1% healthy individuals	Liver disease	Hypo- thyroidism
Myomas	Endometriosis	PID
Adenomyosis	Peritonitis	Normal pregnancy
Benign ovarian tumors	Pleural effusion	

* Royal College of Obstetrics and Gynaecologists; RCOG/BSGE Joint Guideline I: RCOG; 2011 Our study suggests that the technique of intraovarian direct trocar penetration and drainage for access prior to laparoscopic surgery for giant ovarian cyst is effective. This novel procedure provides shorter operation time, less complication and less spillage of the cyst's liquid in the intraabdominal cavity.

The length of stay in the hospital after the procedure was one day in all three cases reported. As best of our knowledge this recent technique has never been reported in the literature.

Conclusion

The intra-ovarian direct trocar penetration and drainage technique prior to laparoscopic surgery for giant ovarian cysts as a novel approach did show great benefits for the patients with less complications, less pain and shorter hospital stay. The procedure is safe, applicable, reliable and effective in the management of benign giant ovarian cysts in patients with no history of previous laparotomy . The technique could be used as one alternative new approach in the

management of giant benign ovarian neoplasms. However more of future studies are needed applying this procedure to enrich the safe, effective and efficient operative laparoscopy with the aim to provide better clinical care for the patients.

No.	Age	Preoperative diagnosis	IOTA criteria	Histopathological finding	Laparoscopic surgery	Operation time (minutes)	Hospital discharge
1	31	right giant ovarian cyst and uterine fibroid	benign	non-papillary serous cystadenoma	unilateral salpingoophore ctomymyomectomy chromotubation	78	2 days
2	41	right ovarian endometrioma	benign	endometriosis	unilateral partial oophorectomy	65	2 days
3	35	giant left ovarian cyst	benign	endometriosis	left salpingoophore ctomy	70	2 days

 Table 3. Cases resume of direct trocar penetration and drainage of giant ovarian cysts



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TheTrocar Issue 1 2020 / Page (30-33) Cystic Adenomyoma of the Uterus

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Keywords: Cystic Adenomyoma; laparoscopic management

Introduction and context

Adenomyosis of uterus is a very common sonographic finding whereas Cystic adenomyoma of uterus is extremely rare variant. Till date only 30 cases are reported in literature, of which most are juvenile cystic adenomyosis. Adult cystic adenomyosis still remains rare and are usually 0.5 cm or more in diameter. We are hereby reporting a case of extremely rare large adult cystic adenomyoma.

Case report

A 29-year-old P2A3 with previous two Cesarean Sections presented to the Out Patient Department (OPD) with a complaint of dysmenorrhea and recurrent miscarriages. It was her first visit to the OPD. Her obstetric history reveals first caesarean for IUGR, second preterm cesarean which resulted in early neonatal death and subsequent three first trimester miscarriages for which dilatation and curettages were performed. Karyotype of patient and husband are normal. Her menstrual cycles were regular. Ultrasound was performed suggestive of diffuse adenomyosis of uterus along with a welldefined circumscribed cystic lesion of 2×2 cm at the right cornu of uterus not disrupting the

Corresponding author: Archana Baser DOI: 10.36205/trocar1.2020001 Published by ISGE 2020 / www.isge.org endometrial cavity possibly leiomyoma with hemorrhagic degeneration or noncommunicating cavitated uterine horn with hematometra.

Routine biochemistry was performed and patient was scheduled for laparoscopic excision of cyst of uterus.

On hysteroscopy the uterine cavity appeared normal in shape and size with both ostia at the proper position thus ruling out the possibility of Müllerian anomaly. On Laparoscopy, a right cornual bulge of approximately 2×2 cm was seen (Fig1)., rest of the anatomy was normal. Both tubes and ovaries appeared normal. Infiltration with diluted vasopressin was performed done over the bulge (Fig.2), an incision was made over the latter (Fig 3) and a capsulated cyst was seen (Fig 4). During the excision, cyst ruptured and a chocolate-colored material drained from it confirming the diagnosis of cystic adenomyosis (Fig 5). The cyst wall was excised, the endometrial cavity was not entered and uterus reconstructed with interrupted sutures (Fig 6). The cyst wall was sent to histopathology which described the endometrial lining of the cyst wall (Fig 7).



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Fig.7: Impression: Adenomyotic cyst – uterus Microscopic: Section show myometrial tissue forming a cystic space lined partly by endometrial lining & partly by granulation tissue with hemosiderin laden macrophages



Fig.: 1



Fig.: 2



Fig.: 3



Fig. 4



Fig.: 5



Fig.: 6



Discussion

Adult cystic adenomyoma shows clinical features similar to those of common adenomyosis, which is usually found in multiparous women over age 30, and is considered a rare variant of adenomyosis characterized by the presence of a hemorrhagic cyst resulting from menstrual bleeding in the ectopic endometrial gland in the myometrium. However, juvenile cystic adenomyoma has different clinical characteristics than those in adult cystic adenomyoma. The pathognomonic clinical feature of juvenile cystic adenomyoma is its early onset of severe dysmenorrhea that usually starts with menarche. This symptom can be attributed to intra-cystic bleeding and stretching of the cystic cavity. Medical treatment with GnRH agonist only provides temporary relief. Surgery remains the main method of treatment. The most common location of this lesion is the anterior wall of the uterus at the level of the insertion of the round ligament. The physical appearance should be differentiated from a Mullerian anomaly. Following a review of the literature, it was determined that the youngest documented patient operated for a diagnosis of juvenile cystic adenomyoma of the otherwise normally developed uterus is a case of an 11-year-old girl with a uni-cornuate uterus and adenomyotic rudimentary functioning horn1,2.

Conventional HSG can be done to rule out the Mullerian anomaly i.e. communicating or non-communicating accessory uterine horns. At HSG, the filling or non-filling of fallopian tubes along with the position of fallopian tube in relation to the uterine cavity helps in diagnosing the condition. But conventional HSG has its own limitations; it cannot be done in unmarried girls, also spasms of fallopian tube at the time of HSG can lead to false results and non-communicating horns of appreciated3. cannot be uterus Therefore laparoscopy remains the gold standard for diagnosis and treatment of such uterine lesions.

Conclusion

Isolated cystic masses within the myometrium can be cystic adenomyoma or a variant of Müllerian malformation. The diagnosis of juvenile or adult cystic adenomyoma is based on the age at onset. Ultrasound in the hands of a skilled gynecologist with background knowledge of the possibility of adenomyoma in uterus can give a definite diagnosis. Conventional HSG and MRI are helpful in providing a clue toward the correct diagnosis but laparoscopy in the hands of an experienced surgeon is the only confirmatory option for such rare disorders.

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TheTrocar Issue 1 2020 / Videoarticle

Laparoscopic management of a functional non communicating uterine horn with hematometra

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Abstract

Study Objective: To demonstrate a technique of laparoscopic management of a functional non communicating uterine horn with hematometra

Design: A step by step description of the surgery using an instructional video

Setting: A private hospital (Akanksha Women's Hospital), Mumbai, India

Patient: Twenty nine year old woman married since 2 years with complaints of dysmenorrhoea and infertility. Had been operated twice before by laparotomy, but abandoned both times. Ultrasound erroneously showed a large broad ligament fibroid with degeneration.

Intervention: Diagnostic hysteroscopy revealed a unicornuate uterus. Expanding metroplasty was done using hysteroscopic scissors. Diagnostic laparoscopy revealed a left functional non communicating horn in close relation to the smaller communicating horn, with extensive distortion of pelvic anatomy by endometriosis. The peritoneum over the left pelvic side wall was dissected to expose the ureter and the left uterine artery. Adhesiolysis was performed to separate the bowel adhesions from the uterus. The chocolate fluid in the horn was drained, and the horn was excised along with its endometrium. The myometrial defect was sutured in two layers, and covered with an adhesion barrier membrane Measurements and main results: Intra operative blood loss was 50 ml, and intra operative time was 120 minutes. The patient conceived spontaneously 12 months after surgery and delivered a healthy baby by elective caesarean section at 36 weeks of pregnancy

Conclusion: Laparoscopic excision of a functional non communicating uterine horn is a challenging procedure and can be complicated by the presence of pelvic endometriosis. Hysteroscopic expanding metroplasty may improve the fertility outcome in select patients with unicornuate uterus.

Disclosure statement: The authors declare that they have no conflicts of interest and nothing to disclose.

Keywords: laparoscopy, congenital uterine anomalies, uni-cornuate uterus, hematometra