UTERINE ANOMALIES

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Congenital uterine anomalies are deviations from the normal anatomy with a variable prevalence of the general population at around 4 - 5% and a significant higher incidence in selected populations such as infertility or recurrent aborters. The discrepancy among different publications originates from their use of different diagnostic techniques, heterogeneous population samples and the anatomical diversity of Mullerian anomalies. The clinical presentation reflects this anatomical diversity as we can be confronted with a life threatening complication like a pregnancy in a non-communicating horn of a unicornuate uterus or severe health problems in the adolescence due to an obstructing anomaly or reproductive problems such as infertility and recurrent miscarriage or finally the malformation does not correlate with any symptom or pathology at all.

Due to their significant prevalence and possible impact on the reproductive health of a woman, congenital uterine malformations are a clinical entity and a challenge in the diagnostic and therapeutic decision making process. An efficient planning of the therapeutic strategy is based on their effective diagnosis and clear categorization. The principle of the AFS Classification for uterine anomalies should be followed in which each uterus is validated in function of its possible deviation from the normal parameters. Today, modern imaging technologies are offering in a non or minimal invasive way much more detailed information on the uterine morphology than in the time period of the establishment of the AFS classification. Latest imaging technology opens a new way for the more objective and accurate description of the different anomalies.

Magnetic resonance imaging (MRI) provides an excellent visualization of the female reproductive organs but due to its cost and difficult accessibility it is only indicated in case of complex anomalies or in the frame of research projects.

3D ultrasound represents a more valid alternative, because in addition to its lower cost and better tolerance by patients, it provides images of very similar quality to those yielded by MRI. With 3D ultrasound we can overcome the anatomical limitations of 2D US and obtain in a systematical way the coronal vision of the uterus, the relationship between cavity and fundus becomes evident and it is possible to make exact measurements such as length and thickness of a septum and volume of the cavity. Today the availability of 3D ultrasound examination has not yet achieved the level that it can be promoted as a routine or screening procedure but it has become fundamental for the diagnosis of congenital uterine malformations.

The gold standard for uterine diagnosis is the combination of 2D ultrasound and mini fluid hysteroscopy. Since they can be performed in the office, the combination of TVS, fluid hysteroscopy and contrast sonography is therefore a powerful screening tool for detecting endometrial and myometrial abnormalities.

The most important challenge is to perform the diagnostic hysteroscopy in the office with an acceptable patient compliance. This should not be underestimated since many patients and Gynecologists still prefer the inpatient approach believing that it will be pain-free.

The scientific evidence gathered over the last years and with the introduction of a new generation, multi functional, mini hysteroscopes have given an answer to the question how diagnostic hysteroscopy should be implemented successfully in an office environment. The correct instrument selection, the atraumatic insertion technique and the use of watery distension medium are essential for successful office hysteroscopy. It is very interesting to note that miniaturization of the instruments effectively counteracts the difficulties determined by both the operator and the patient, allowing the performance of office hysteroscopy even by less experienced gynaecologists and in the vast majority of patients. The procedure begins with a physical exam and a TVS to evaluate uterus characteristics. A vaginal disinfection with a non-irritating watery disinfection solution is performed without placing a speculum. This approach requires a good knowledge of the physics and instrumentation as well as dexterity on the part of the operator (i.e. the correlation between what is seen in the screen and the actual position of the 30° fore-oblique scope). Immediately after the hysteroscopy, a second TVS is performed taking advantage of the intracavitary fluid for a contrast image of the uterus.

Performing the 2D US and mini fluid hysteroscopy as a screening procedure and the 3D ultrasound in case of suspected anomaly provides a more objective definition of the different
uterine anomalies.

Own data show that in the infertile patients and recurrent aborters the incidence of the septated and T shaped uterus is highly significant. Woelfer etal. Published recently the significant correlation between the arcuated or uterus subseptus and early trimester pregnancy losses and the septated uterus with late abortions and premature deliveries. This observation supports the hypothesis that attention should be given also to the rather small cavity deformations and surgical correction of those could be of major benefit to the patient.

Scientific evidence is present that a woman with recurrent pregnancy losses and a septated uterus surgery will restore the pregnancy outcome to the normal expectations. On the other hand we do not have any evidence when an uterine septum is diagnosed in an asymptomatic women if this malformation will be responsible for any reproductive problems. Hysteroscopy is the gold standard for the treatment of a uterine septum. Small malformations are treated with the micro scissors and bipolar needle whereas for total septa the mini bipolar resectoscope is preferred. Independently of the hysteroscopic instrumentation the control of depth of penetration is performed by concomitant ultrasound rather than a laparoscopy. In this manner the surgery is performed as an ambulatory procedure under conscious sedation and patient can leave the facility one hour after surgery.

Conclusion

Uterine septum significantly contributes to the increase of early and late pregnancy losses. The size of the uterine septum seems to correlate with the onset of the pregnancy loss and hysteroscopy is the gold standard for the treatment. Surgery is indicated by patients suffering from infertility prior to any ART procedure and patients with recurrent pregnancy losses.

New imaging technique and especially the 3D US provide us the necessary tools to be able to make a more objective differentiation between the different uterine anomalies and could contribute to a more accurate classification of the different anomalies.