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Case report of multidisciplinary management of complex pathology of the reproductive system against the background of congenital anomaly of the uterus in combination with surgical pathology

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Abstract: *this clinical case is an example of successful treatment of complex pathology of the reproductive system against the background of congenital anomaly of the uterus, specifically complete septate uterus with duplicated cervix and longitudinal septum of the upper third of the vagina, in combination with surgical pathology, such as left-sided direct reducible inguinal hernia, using simultaneous surgical intervention with laparoscopic access. No complaints were found during the patient's visit for an annual preventive examination. A full physical, laboratory, and instrumental examination was performed, such as general examination, breast examination and palpation, gynecological examination, including speculum examination and palpation of the pelvic organs, cytomorphological examination of both cervixes, microscopic examination of genital discharge, and transvaginal ultrasound of the pelvic organs. Due to the detection of a mass in the left ovarian region, as well as signs of vulvar lichen sclerosus, additional examination was conducted – ovarian tumor markers (CA 125, HE4, ROMA index) were determined, a Pipelle biopsy of both uterine cavities, a vulvar biopsy, and pelvic MRI were performed. Surgical specialists were involved due to the suspected left-sided direct reducible inguinal hernia for a consultation to establish an accurate diagnosis and choose the optimal therapeutic strategy selection. The multidisciplinary approach to the patient's management demonstrated high treatment efficiency using minimally invasive techniques and contributed to a favorable prognosis.*

Key words: Hernia; Infertility; Female; Preventive Medicine; Uterine Duplication Anomalies; Vulvar Lichen Sclerosus; inguinal.

Introduction

According to the World Health Organization (WHO), the overall prevalence of congenital malformations among newborns is about 3-6%, 5-10% of which are uterine anomalies [1]. The dynamics in Ukraine are similar to the above: the prevalence of genital anomalies is about 9.4%, 44.1% of which are uterine septum, 22.3% are bicornuate uterus, and 17.9% are unicornuate uterus. The described congenital malformations are usually diagnosed in women at the peak of their reproductive age – between 20 and 30 years – during an examination due to infertility, repeated miscarriages, and other

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obstetric or gynecological complications, the frequency of which varies between 25-50% depending on the type of anomaly [2].

In addition, this clinical case is an example of the increasing prevalence of vulvar lichen sclerosus among women of reproductive age, which is more commonly associated with the menopausal period, and raises concerns among modern researchers [3].

Aim

The purpose of the clinical case report of complex reproductive pathology against the background of the congenital uterine anomaly was to determine the impact of the defect on the functioning of the reproductive system, the likelihood of complications and associated pathologies, as well as to assess the effectiveness of a multidisciplinary approach in the diagnosis and treatment of the patient, and to investigate the role of preventive examinations.

Description of the clinical case

A 35-year-old female patient visited an obstetrician-gynecologist for an annual preventive examination. There were no complaints at the time of the examination.

Anamnesis: at the age of 22 years, a congenital uterine anomaly was diagnosed during a routine examination. A right ovarian cyst was diagnosed during a routine examination one year ago, and surgical intervention such as laparoscopic ovarian cystectomy was performed. The obtained material was sent for histopathological examination, which confirmed a corpus luteum cyst with hemorrhage. The patient denies any history of tuberculosis, hepatitis, sexually transmitted diseases, or other surgical interventions. No significant allergic and hereditary conditions are reported. Menstruation began at the age of 13, lasting 5 days, painful, with increased amount of discharge, and regular 28-day cycle. The patient is married, sexually active, does not use contraception, but has never been pregnant.

Findings from the physical examination: the external genitalia were properly developed, a white-colored area with signs of mucosal thinning and shine was visualized; pubic hair distribution had female pattern; the vaginal introitus was open; a longitudinal septum was observed in the upper third of the vagina, along with two separate cervixes, both macroscopically unchanged; uterus was not enlarged, mobile, non-tender; the adnexa on the right were not palpable, on the left were enlarged, with a round, mobile, non-tender mass measuring up to 3 cm in diameter; fornices were deep, parametrium was free; vaginal discharge was mucous, moderate in amount. The mammary glands were symmetrical, no deformities were visualized, the skin was unchanged, the nipples were symmetrical, not deformed, the breasts were soft, non-tender, there was no pathological discharge from the nipples, and the regional lymph nodes were not palpable. Additionally, a rounded bulge of the anterior abdominal wall approximately 5 cm in diameter was visualized in the left inguinal region above the inguinal ligament. It was soft, non-tender, self-reducing in a horizontal position, with a positive cough impulse sign. Due to this findings, a surgeon was involved in the diagnostic process and a left-sided direct reducible inguinal hernia was established.

A Pap smears from both cervixes was performed – type I (normal); a microscopic examination was done – II degree of vaginal cleanliness, mixed, moderate microflora, no gonococci, trichomonas, chlamydia, fungi, or clue cells were detected; ovarian tumor markers were evaluated – CA 125, NE4, ROMA index – within reference limits. A transvaginal ultrasound of the pelvic organs revealed an abnormality of the uterus – complete septate uterus with duplicated cervix and longitudinal septum of the upper third of the vagina (class III according to ASRM 2021) (Pfeifer et al., 2021) (Image 1), a left ovarian dermoid cyst (ORADS2), a subcutaneous mass in the left inguinal area (suspected pelvic serous cystocele), and a left-sided inguinal hernia.

Further diagnostic workup was planned, and surgical intervention was deemed necessary. A Pipell biopsy of both uterine cavities, and a vulvar biopsy were performed, where the fragments of endometrium corresponding to the proliferative phase, and moderate hyperkeratosis of the stratified squamous epithelium without neoplasia (vulvar leukoplakia) were detected. Pelvic MRI revealed a complete uterine septum with cervical duplication and a longitudinal vaginal septum at the level of the upper third; an oval-shaped left ovarian mass with a well-defined contour, heterogeneous content

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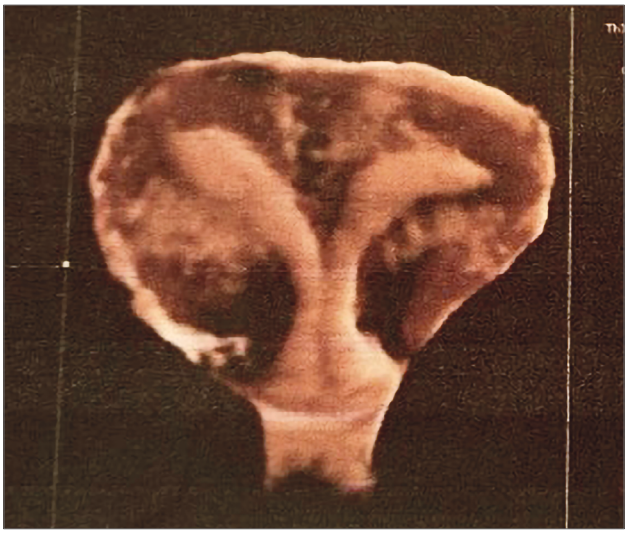

Image 1. 3D image of complete uterus duplication, which is made during transvaginal ultrasound of the pelvic organs

with a significant fat component and a solid mural nodule, which most closely corresponds to a mature teratoma (Image 2A); a right ovarian follicular cyst (Image 2B); a left-sided inguinal hernia (Image 2C); a subcutaneous mass in the left inguinal area (suspected pelvic serous cystocele) (Image 2D), and adhesions at the level of the uterine body and right ovary (postoperative changes).

A full preoperative workup was conducted, and no other pathological changes or contraindications to surgery were found.

The clinical diagnosis was made: congenital uterine anomaly: complete septate uterus with duplicated cervix and longitudinal septum of the upper third of the vagina (type III according to ASRM 2021 classification), left ovarian dermoid cyst (ORADS2), right ovarian follicular cyst,

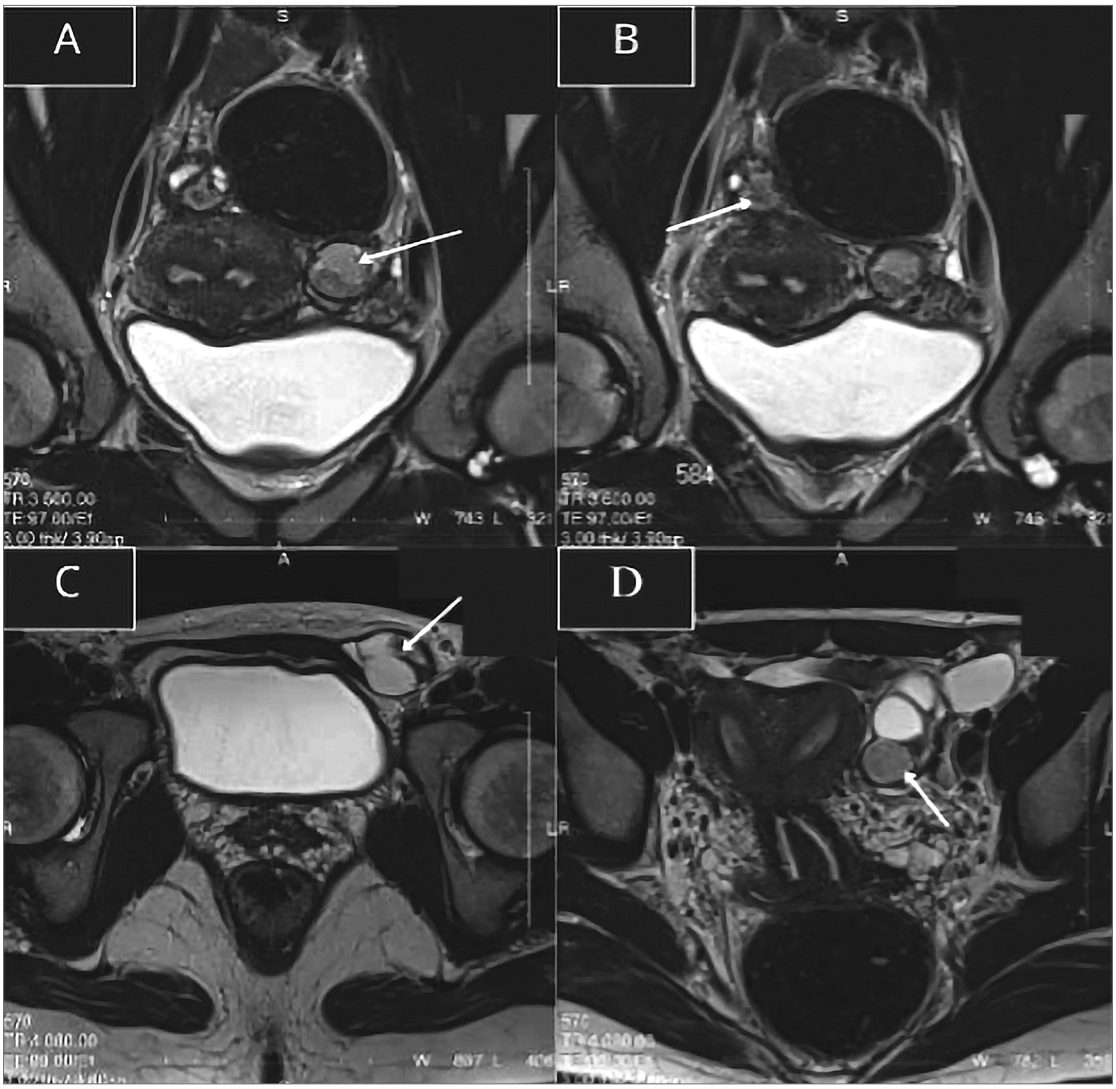

Image 2. Data of the pelvic MRI

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left pelvic serous cystocele, vulvar leukoplakia, primary infertility, pelvic adhesions, left-sided direct reducible inguinal hernia. The consilium with general surgery team was held, and a decision to perform simultaneous surgery using a laparoscopic approach was made. In the course of the surgery, the adhesiolysis was made, the cysts of the left (Image 3, white arrow) and right ovaries were removed, the cyst of the left round ligament (Image 3, yellow arrow), which was previously interpreted as a left-sided pelvic serous cystocele, and the hydatid of the left fallopian tube were visualized and removed.

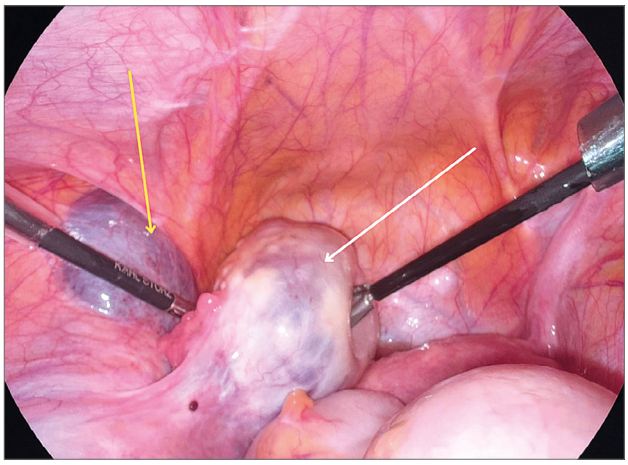

Image 3. Visualization of a left ovarian teratoma and a cyst of the left round ligament during simultaneous laparoscopic surgery

After the gynecological part of the surgery, the hernioplasty of the left-sided inguinal hernia was performed by general surgeons. The obtained material was sent for pathological examination, which confirmed the mature teratoma. The final diagnosis was made: congenital uterine anomaly: complete septate uterus with duplicated cervix and longitudinal septum of the upper third of the vagina (type III according to ASRM 2021 classification), left ovarian dermoid cyst (ORADS2), right ovarian follicular cyst, left round ligament cyst, left fallopian tube hydatid, vulvar leukoplakia, primary infertility, pelvic adhesions, left-sided direct reducible inguinal hernia.

The postoperative period was uneventful. The patient received antibiotic therapy (cefazolin 1.0), pain management (paracetamol solution 1% 100 ml and dexketoprofen 2.5% 2 ml), infusion therapy (glucose solution 5% 400 ml and other crystalloid solutions). Postoperative wounds healed by primary intention, and dressings were performed using an aqueous iodine solution. Patient was discharged in satisfactory condition on postoperative day 4. Follow-up pelvic ultrasound showed no pathological changes.

Disscusion

During the analysis of the presented clinical case, a favorable prognosis was established considering the dynamics of complex pathology of the reproductive system and the patient's recovery rate after an effective simultaneous surgical intervention.

The issue of reproductive function implementation remains unresolved. Based on the numerous studies on this subject [4], it can be concluded that pregnancy is possible in cases of congenital uterine anomalies, as well as its successful management. However, this usually requires the involvement of reproductive specialists to apply additional reproductive technologies, as well as enhanced monitoring of pregnancy to prevent and timely detect potential complications. Considering this information, the patient was provided with appropriate recommendations.

In addition, the detection of vulvar leukoplakia in a patient of reproductive age is noteworthy, as it is usually a consequence of vulvar lichen sclerosus and is more typical for the menopausal period[5]. In this case, the patient does not have any complaints regarding the diagnosed pathology, but this finding requires further investigation and observation. If symptoms develop, the appropriate therapy should be prescribed. In this regard, the patient was informed about possible course of events and received the necessary recommendations.

Conclusions

Congenital uterine anomalies affect the functioning of the reproductive system and are primarily associated with infertility. Their presence also significantly increases the likelihood of coexisting reproductive system pathology, which requires a comprehensive examination for timely detection and treatment. A multidisciplinary approach, involving collaboration among specialists from different fields, enhances the efficiency of diagnostic

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investigations and facilitates the selection of the least invasive yet most effective management strategy for patients with complex pathologies. This clinical case highlights the importance of preventive examinations, which allows early diagnostic of latent pathologies, even in the absence of pronounced clinical symptoms, thereby preventing the likelihood of disease progression and the development of complications.

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This study received no external funding.

Conflict of interests

The authors declare no potential or apparent conflicts of interest related to this manuscript.

Consent to publication

The patient's consent to publish the case report was obtained. All authors have read the manuscript and agreed to its publication.

ORCID ID and AUTHORS CONTRIBUTION

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A – Work concept and design, B – Data collection and analysis, C – Responsibility for statistical analysis, D – Writing the article, E – Critical review, F – Final approval of the article

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Клінічний випадок мультидисциплінарного ведення комплексної патології репродуктивної системи на фоні вродженої аномалії розвитку матки у поєднанні з хірургічною патологією

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Анотація: *наведений клінічний випадок є прикладом успішного лікування комплексної патології репродуктивної системи на фоні вродженої аномалії розвитку матки, а саме*

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повного подвоєння матки та шийки матки з поздовжньою перетинкою верхньої третини піхви, у поєднанні із хірургічною патологією – лівобічною прямою вправимою паховою килою, із застосування симультанного оперативного втручання лапароскопічним доступом. У ході звернення пацієнтки для проходження щорічного профілактичного огляду жодних скарг не було виявлено. Було виконано повноцінне фізикальне, лабораторне та інструментальне обстеження – загальний огляд, огляд та пальпація молочних залоз, гінекологічний огляд, в тому числі огляд у дзеркалах та пальпація органів малого тазу, цитоморфологічне дослідження обох шийок матки, мікроскопічне дослідження виділень із статевих органів та трансвагінальне ультразвукове дослідження органів малого тазу. У зв'язку із виявленням новоутворення в ділянці лівого яєчника, а також ознак атрофічного склерозуючого ліхену проведено дообстеження – визначено онкомаркери яєчників (CA 125, HE4, індекс ROMA), проведено пайпель-біопсію з обох порожнин матки, біопсію вульви та МРТ органів малого тазу. Залучено спеціалістів хірургічного профілю через підозру на наявність лівобічної прямої вправимої пахової кили для проведення консиліуму щодо встановлення точного діагнозу та обрання оптимальної терапевтичної тактики. Мультидисциплінарний підхід у веденні пацієнтки показав високу ефективність лікування із застосуванням менш інвазивних методик та створив сприятливий прогноз.

Ключові слова: пахова кила, жіноче неплідддя, профілактична медицина, аномалії подвоєння матки, склерозуючий ліхен вульви.