RST Research and Science Today
WWW.RSTJOURNAL.COM
SUPPLEMENT 2/2019
ISSN-E: 2344-0007 / ISSN-L: 2344-0007

Medicine

ABDOMINAL WALL ENDOMETRIOSIS - A REVIEW AND PERSONAL EXPERIENCE

Bogdan SOCEA[1]
Ion PÃUN[2]
Vlad BÃLEANU[3]
Dragoş Virgil DAVIŢOIU[4]
Tiberiu Ştefãniţã ŢENEA COJAN[5]
Ovidiu Gabriel BRATU[6]
Ruxandra STÃNCULESCU[7]
Diana Elena COMANDAŞU[8]
Alexandra BAUŞIC[9]
Ana Maria Alexandra STĂNESCU[10]
Lucian ALECU[11]
Iulian SLAVU[12]
Adrian TULIN[13]
Mihaela NEDELCUTA[14]
Vlad Denis CONSTANTIN[15]

[1] University of Medicine and Pharmacy Carol Davila, 8 Eroii Sanitari Str, 050474, Bucharest, Romania, "Sf. Pantelimon" Emergency Clinical Hospital, General Surgery Department, 340 Sos. Pantelimon, 021659, Bucharest, Romania
[2] University of Medicine and Pharmacy of Craiova, 2 Petru Rares Str., 200349, Craiova, Romania, CF Craiova Clinical Hospital, 6 Stirbei Voda, 200374, Craiova, Romania
[3] "Sf. Pantelimon" Emergency Clinical Hospital, General Surgery Department, 340 Sos. Pantelimon, 021659, Bucharest, Romaniaa
[4] University of Medicine and Pharmacy Carol Davila, 8 Eroii Sanitari Str, 050474, Bucharest, Romania
[5] University of Medicine and Pharmacy of Craiova, 2 Petru Rares Str., 200349, Craiova, Romania
[6] University of Medicine and Pharmacy Carol Davila, 8 Eroii Sanitari Str, 050474, Bucharest, Romania; Carol Davila University Emergency Central Emergency Military Hospital, 88 Mircea Vulcanescu Str, 010825, Bucharest, Romania; Academy of Romanian Scientists, 54 Splaiul Independentei, 050085, Bucharest, Romania
[7] Associate Professor, MD, PhD in Medicine, Department of Obstetrics and Gynaecology, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania, "Sf. Pantelimon" Clinical Emergency Hospital, Bucharest, Romania
[8] University Assistant, MD, PhD Student in Medicine, Department of Obstetrics and Gynaecology, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania, "Panait Sîrbu" Clinical Hospital, Bucharest, Romania
[9] Resident Physician, MD, Department of Obstetrics and Gynaecology, "Panait Sîrbu" Clinical Hospital, Bucharest, Romania
[10] University of Medicine and Pharmacy Carol Davila, 8 Eroii Sanitari Str, 050474, Bucharest, Romania
[11] General Surgery Clinic, Prof. Dr."Agrippa Ionescu" Emergency Clinical Hospital, Bucharest, Romania
[12] General Surgery Clinic, Emergency Clinical Hospital "Floreasca", Bucharest, Romania
[13] General Surgery Clinic, Prof. Dr."Agrippa Ionescu" Emergency Clinical Hospital, Bucharest, Romania
[14] "*Filantropia*" *Hospital* from Craiova, Romania
[15] University of Medicine and Pharmacy Carol Davila, 8 Eroii Sanitari Str, 050474, Bucharest, Romania, "Sf. Pantelimon" Emergency Clinical Hospital, General Surgery Department, 340 Sos. Pantelimon, 021659, Bucharest, Romania

ABSTRACT:
ENDOMETRIOSIS IS CHARACTERIZED BY THE PRESENCE OF UTERINE MUCOSAL TISSUE OUTSIDE THE UTERUS. ABDOMINAL WALL ENDOMETRIOSIS (AWE) IS A RARE ENTITY, USUALLY DEVELOPED IN THE FERTILE PERIOD OF WOMEN. IT MEANS ENDOMETRIOSIS OUTSIDE THE PERITONEUM. PARIETAL ENDOMETRIOSIS INCLUDE, BESIDE AWE, PERINEAL ENDOMETRIOSIS. IT CAN BE PRIMARY ENDOMETRIOSIS (WHICH IS QUITE RARE, SUCH AS UMBILICAL), OR, MORE OFTEN, SECONDARY, AFTER SURGICAL OR GYNECOLOGICAL PROCEDURES. SCAR ENDOMETRIOSIS IS DUE TO INTRAOPERATIVE DISEMINATION AND IS MORE FREQUENTLY LOCATED TO C-SECTION SCAR. THE SYMPTOMS INCLUDE CATAMENIAL PAIN, PALPABLE MASS WITH OR WITHOUT CYCLIC VARIATIONS, AND EVEN EXTERNAL HAEMORRAGE SYNCRONOUS WITH MENSTRA. CYCLICITY OF PAIN OR OF MASS DIMENSIONS' VARIATION IS NOT PRESENT IN ALL CASES. DIFFERENTIAL DIAGNOSIS SHOULD BE MADE WITH STITCH GRANULOMA, ABSCESS, LIPOMA, HEMATOMA, SEBACEOUS CYST, SEROMA, HERNIA, OR EVEN MALIGNANT TUMORS. IMAGISTIC METHODS, SUCH AS ULTRASOUND, MRI AND CT SCAN ARE USEFULL FOR DIAGNOSIS. SURGICAL EXCISION OF ENDOMETRIAL MASS IS UNANIMOUSLY CONSIDERED TO BE THE ONLY CURATIVE TREATMENT.

KEY WORDS: ABDOMINAL WALL ENDOMETRIOSIS, PARIETAL ENDOMETRIOSIS

INTRODUCTION

Endometriosis could be an important issue concerning women of reproductive age due to its debilitating painful symptoms. The severest form of the disease is that of deep infiltrating endometriosis involving pelvic organs, such as rectum, urinary bladder, small or large bowel, uterosacral ligaments[16]. This form poses complex treatment problems.

The presence of the uterine mucosa outside the organ is rather rare. However, there are cases of endometriosis both in the abdominal wall, perineum, and even located in the internal organs,

[16] Mehedintu, Claudia; Antonovici, Marina; Brinduse, Lacramioara; Bratila, Elvira; Stanculescu, Ruxandra; Berceanu, Costin; Bratu, Ovidiu; Pituru, Silviu; Onofriescu, Mircea; Matasariu, Daniela Roxana. *The influence of progesterone on immunohystochemical markers in endometriosis*. Rev Chim (Bucharest), 2018; 69(3): 581-584; Stanimir, M; Chiutu, LC; Wese, S; Milulescu, A; Nemes, RN; Bratu, O. *Mullerianosis of the urinary bladder: a rare case report and review of the literature*. Rom J Morphol Embryol. 2016; 57(2 Suppl): 849-852; Socea, Laura Ileana; Visan, Diana Carolina; Barbuceanu, Stefania Felicia; Apostol, Theodora Venera; Bratu, Ovidiu Gabriel; Socea, Bogdan. *The antioxidant activity of some acylhydrazones with dibenzo[a,d][7]annulene moiety*. Rev Chim (Bucharest), 2018, 69(4): 795-797; Marcu, D; Bratu, O; Spinu, D; Oprea, I; Vacaroiu, I; Geavlete, B; Diaconu, C; Mischianu, D. *Iatrogenic ureteral injury following radical hysterectomy-case presentation*. Modern Medicine, 2017, 24(1): 45-51; Bodean, Oana; Bratu, Ovidiu; Munteanu, Octavian; Marcu, Dragos; Spinu, Dan Arsenie; Socea, Bogdan; Diaconu, Camelia; Cirstoiu, Monica; *Iatrogenic injury of the low urinary tract in women undergoing pelvic surgical interventions*. Archives of the Balkan Medical Union, 2018, 53(2): 281-284; Nada, Elena-Silvia; Brinduse, Lacramioara; Bratu, Ovidiu; Marcu, Dragos; Bratila, Elvira. *Endometriosis-associated infertility*. Modern Medicine, 2018, 25(3): 131-136; Bruja, Alexandra; Brinduse, Lacramioara; Bratu, Ovidiu; Diaconu, Camelia; Bratila, Elvira. *Methods of transvaginal ultrasound examination in endometriosis*. Modern Medicine, 2018, 25(3): 111-116.

such as the large bowel[17]. The diagnosis in such cases could be difficult. Endometriosis affects 6%-10% of fertile women, being usually located in the pelvis[18].

The treatment of endometriosis could be medical, surgical or both (combined treatment). There is no optimal treatment for endometriosis. The medical treatment is based on synthetic progestin pills. It represents a solution for the women who do not intend to become pregnant. The long term medical treatment could be applied preoperatively or postoperatively[19]. The surgical excision of the lesions, in healthy tissue (with histopathologicaly confirmed free margins), remains the only curative treatment.

MAIN TEXT

The etiopathogenesis of endometriosis was not clearly elucidated and remains controversial. There are several theories supposed to be involved, including metaplasia, direct dissemination or transplantation, retrograde menstruation, vascular or lymphatic metastasis, and aerosolization[20].

Two theories have been suggested for explaining abdominal wall endometriosis (AWE)[21]. The first suggests that endometrial cells may be translated to ectopic sites (particularly during surgical procedures that require opening the uterus). This is the most accepted theory that can explain why many patients with scar location of the disease do not present signs or personal history of peritoneal endometriosis. The second theory supposes that, primitive pluripotential mesenchymal cells may undergo specialized differentiation to form endometriomas. This mechanism explains the rare cases of AWE non-scar reported in the literature - patients without a surgical history.

Different imaging methods (ultrasound, MRI, CT) are useful in positive diagnosis and determining the extent of disease. On imagistic bases, also, one can plan the extension of the surgical resection, especially for recurrent and large lesions. In lesions involving multiple organs, we have to plan the resection and the reconstruction, as well. The surgical treatment also implies adhesiolysis[22]. The diagnosis is non-specific, there are no pathognomonic imagistic findings for endometriosis. The only certain positive diagnostic is established by the hystopathological exam.

---

[17] Constantin, Vlad; Carâp, Alexandru; Bobic, Simona; Păun, Ion; Brătilă, Elvira; Socea, Bogdan; Moroșanu, Ana-Maria; Mirancea, Nicolae; *Accurate diagnosis of sigmoid colon endometriosis by immunohistochemistry and transmission electron microscopy - a case report.* Chirurgia, 2015, 110(5): 482-485.

[18] Burney, RO; Giudice, LC; *Pathogenesis and pathophysiology of endometriosis.* Fertil Steril, 2012, 98: 511-519.

[19] Bodean, Oana; Bratu, Ovidiu; Bohiltea, Roxana; Munteanu, Octavian; Marcu, Dragos; Spinu, Dan Arsenie; Vacaroiu, Ileana Adela; Socea, Bogdan; Diaconu, Camelia Cristina; Fometescu Gradinaru, Delia; Cirstoiu, Monica; *The efficacy of synthetic oral progestin pills in patients with severe endometriosis.* Rev. Chim. (Bucharest), 2018, 69(6): 1411-5.

[20] Chang, Y; Tsai, EM; Long, CY; Chen, YH; Kay, N; *Abdominal wall endometriomas.* J Reprod Med, 2009, 54: 155-159.

[21] Steck, WD; Helwig, EB; *Cutaneous endometriosis.* JAMA, 1965, 191: 167-170;

[22] Bobic, Simona; Socea, Bogdan; Bratu, Ovidiu Gabriel; Stanescu, AMA; Baleanu, Vlad Dumitru; Davitoiu, Dragos Virgil; Dimitriu, MCT; Dumitrescu, Dan; Badiu, Cristinel Dumitru; Constantin, Vlad Denis; *Extensive laparoscopic adhesiolysis: benefits and risks. Arch Balk Med Union,* 2019, 54(2): 320-324, doi.org/10.31688/ABMU.2019.54.2.15; Bobic, Simona; Popa, Florian; Socea, Bogdan; Carap, Alexandru; Davițoiu, Dragoş; Constantin, Vlad Denis; *Blunt abdominal trauma and peritoneal adhesions.* Research and Science Today, 2018, 1(15): 119-31.

The pelvin tumoral endometrial masses should be imagistically differentiated from other genital tumors, benignant or malignant[23].

Although rare, it is important that clinicians, even gynecologists or surgeons, and sonographers are familiarized with this pathology. Considering the increasing rate of caesarean deliveries all over the world[24], it is expected that this pathology will be encountered more and more frequently in daily practice.

The histopathological diagnosis is based on recognition of at least two from three following criteria: endometrial stroma, endometrial glands and hemosiderin pigment[25].

In a two years interval (between 2017 and 2018), in the surgery clinic of "Sf. Pantelimon" Emergency Hospital, Bucharest, we surgically treated 11 women with parietal endometriosis. In 9 cases, the women had personal history of surgical interventions in the gynecological area. This was the reason why we supposed that the main ethiopathological mechanism was direct dissemination of the endometrial tissue during previous surgical interventions that involved uterus, since all those patients had scar lesions. All the 9 women did not have any peritoneal history of endometriosis, thus they confirmed the most accepted theory, of intraoperative dissemination. All these patients had lesions adjacent to cesarean-delivery scars, in 7 cases Phannenstiel incision and in the other 2 median sub-umbilical incisions. These data are concordant to those in the literature[26]. Some authors hypothesized that suboptimal closure of either the uterine or abdominal wall could be at the origin of the implantation theory[27]. The closure becomes more difficult in obese patients, this being a risk factor, together with the higher levels of estrogens synthesized in the adipose tissue.

Only isolated cases of AWE without any previous surgery are reported in the literature[28]. We had one case of umbilical spontaneous endometriosis (Villar node) and one case located in right iliac fossa. This seems to confirm that, under right circumstances, primitive pluripotential mesenchymal cells could differentiate to endometriomas. This is the second theory that explains the rare cases of endometriosis in women with negative surgical history.

All our patients had preoperative ultrasound soft tissue examination. Ultrasound examination represents the first step in evaluating a soft tissue mass. It showed unhomogenous abdominal wall nodules with hypoechoic content and blurred outer margins. The mainly preoperative established

---

[23] Dimitriu, Mihai; Tarcomnicu, Iulia M; Gheorghiu, Diana; Haradja, Horatiu; Banacu, Mihail; Popescu, I; Hanganu, I; Pacu, Irina; Vladescu, Teodora; Socea, Bogdan; Furau, C; Furau, Gheorghe; Bacalbasa, Nicolae; Jitianu, Constantin Razvan; Ionescu, Cringu. *Massive ovarian fibrothecoma.* Archives of the Balkan Medical Union, 2016, 51(2): 267-272; Ionescu, AM, Socea, Bogdan; Dimitriu, MCT; Constantin, Vlad Denis; Ionescu, Cringu Antoniu; Matei, A; Gheorghiu, Diana; Pacu, Irina; Vladescu, Teodora; Niculae, MB; *Struma ovarii in a 56-year-old woman: a case report. Arch Balk Med Union,* 2019, 54(2): 368-371, doi.org/10.31688/ABMU.2019.54.2.24.

[24] Dimitriu, Mihai; Socea, Bogdan; Ples, Liana; Gheorghiu, Diana-Claudia; Gheorghiu, Nicolae; Neacsu, Adrian; Cirstoveanu, Catalin-Gabriel; Bacalbasa, Nicolae; Furau, Cristian George; Furau, Gheorghe Oto; Banacu, Mihail; Ionescu, Cringu Antoniu; *Robson criteria for cesarean section-an imperative and emergent necessity in romanian obstetrics.* Rev. Chim. (Bucharest), 2019, 70(3): 1058-1061.

[25] Khamechian, T; Alizargar, J; Mazoochi, T; *5-year data analysis of patients following abdominal wall endometrioma surgery.* BMCWomensHealth, 2014, 14: 151-6.

[26] Ecker, AM; Donnellan, NM; Shepherd, JP; Lee, TT; *Abdominal wall endometriosis: 12 years of experience at a large academic institution.* Am J Obstet Gynecol, 2014, 211: 363.e1-5.

[27] Khan, Z; Zanfagnin, V; El-Nashar, SA; Famuyide, AO; Daftary, GS; Hopkins, MR; *Risk factors, clinical presentation, and outcomes for abdominal wall endometriosis.* J Minim Invasive Gynecol, 2017, 24: 478-484.

[28] Ideyi, SC; Schein, M; Niazi, M; Gerst, PH; *Spontaneous endometriosis of the abdominal wall.* Dig Surg, 2003, 20: 246-248.

ISSN-E: 2344-0007 / ISSN-L: 2344-0007

diagnosis was stitch granuloma in 6 from 11 cases. It is well known that a correct diagnosis of scar endometriosis is preoperatively made only in a minority of 20%-50% of patients[29].

Only 2 of our patients had preoperative CT scan and only one underwent a MRI examination. Neither these imagistic examinations could established the diagnosis. The right diagnosis was supposed only in 3 of our cases, based on the personal surgical history and the cyclical variations of symptoms.

The typical clinic triad consists of a history of cesarean delivery, cyclic pain associated with menses, and palpable nodules near a surgical scar[30].

Spontaneous umbilical endometriosis, also known as Villar's nodule, was previously described in literature and represents an unusual location of the endometrial tissue[31]. Its frequency represents less than 1% of all endometriosis locations.

The large excision in some of our cases involving the fascia and muscular aponeurosis (4 cases) required an alloplastic repair of the abdominal wall, using a polipropylene mesh. The technique was cited before in the literature as a solution for parietal reconstruction after large excisions[32]. We did not encountered complications related to mesh usage in cases of endometriosis. The use of mesh was neither followed by common postoperative complications related to synthetic meshes, such as seroma and infection of the prothesis, nor by a higher rate of recurrence of the disease. For all cases in which we used synthetic material, we placed a subcutaneous aspirative drain, which was maintained several days, depending on the quantity of drained fluid per day. The mesh usage was considered to protect against incisional hernia, which was not encountered for our patients in the follow-up period of one year. All the patients underwent postoperative anticoagulant therapy (prophylactic)[33] and no thrombotic complications were noticed. Intensive care units admission was made only under objective criteria[34].

CONCLUSIONS

Even if rarely encountered by the general surgeon, abdominal wall endometriosis must be take into account in all fertile women with or without previous surgical or obstetrical interventions, that complain of pain synchronous with mensa at the level of abdominal wall. The diagnosis should be sustained by imagistic methods (the simplest being soft tissue ultrasound) and confirmed by histopathology exam. The only curative treatment remains large excision of PE with disease-free margins. It is recommended a free margin of 1 centimeter from the surrounding tissues. Radical

[29] Bektaş, H; Bilsel, Y; Sari, YS; et al; *Abdominal wall endometrioma; a 10-year experience and brief review of the literature.* J Surg Res, 2010, 164: e77-e81.
[30] Esquivel-Estrada, V; Briones-Garduño, JC; Mondragón-Ballesteros, R; *Endometriosis implant in cesarean section surgical scar.* Cir Cir, 2004, 72: 113-115.
[31] Pariza, George; Mavrodin, CI; *Primary umbilical endometriosis (Villar's nodule) – case study, literature revision.* Chirurgia, 2014, 109(4): 546-549.
[32] Pariza, George; Mavrodin, CI; *Primary umbilical endometriosis (Villar's nodule) – case study, literature revision.* Chirurgia, 2014, 109(4): 546-549.
[33] Safta, Andreea Nicoleta; Constantin, Vlad Denis; Socea, Laura-Ileana; Socea, Bogdan; *The efficiency of low molecular weight heparins in the prophylaxis of venous thromboembolic complications in general surgery.* Farmacia, 2012, 60(1): 127-137; Laslo, Crista L; Pantea Stoian, Anca; Socea, Bogdan; Paduraru, Dan N; Bodean, Oana; Socea, Laura I; Neagu, Tiberiu P; Stanescu, Ana Maria Alexandra; Marcu, Dragos; Diaconu, Camelia C; *New oral anticoagulants and their reversal agents.* J Mind Med Sci. 2018; 5(2): 195-201.
[34] Socea, Bogdan; *Admission criteria in Intensive Care Units following an objective evaluation or a personal decision.* Journal of Experimental Research on Human growth & Aging (JERHA), 18 Feb 2019, 2(1): 1-3.

extended excisions may be followed by abdominal alloplastic wall reconstructions, that do not negatively affect the morbidity and mortality of patients.

ACKNOWLEDGEMENTS
All authors equally contributed in the research and drafting of this paper.
All authors report no potential conflict of interest.

ISSN-E: 2344-0007 / ISSN-L: 2344-0007

REFERENCES

1. **Mehedintu, Claudia; Antonovici, Marina; Brinduse, Lacramioara; Bratila, Elvira; Stanculescu, Ruxandra; Berceanu, Costin; Bratu, Ovidiu; Pituru, Silviu; Onofriescu, Mircea; Matasariu, Daniela Roxana.** *The influence of progesterone on immunohystochemical markers in endometriosis*. Rev Chim (Bucharest), 2018; 69(3): 581-584.
2. **Stanimir, M; Chiutu, LC; Wese, S; Milulescu, A; Nemes, RN; Bratu, O**. *Mullerianosis of the urinary bladder: a rare case report and review of the literature*. Rom J Morphol Embryol. 2016; 57(2 Suppl): 849-852.
3. **Socea, Laura Ileana; Visan, Diana Carolina; Barbuceanu, Stefania Felicia; Apostol, Theodora Venera; Bratu, Ovidiu Gabriel; Socea, Bogdan**. *The antioxidant activity of some acylhydrazones with dibenzo[a,d][7]annulene moiety*. Rev Chim (Bucharest), 2018, 69(4): 795-797.
4. **Marcu, D; Bratu, O; Spinu, D; Oprea, I; Vacaroiu, I; Geavlete, B; Diaconu, C; Mischianu, D**. *Iatrogenic ureteral injury following radical hysterectomy-case presentation*. Modern Medicine, 2017, 24(1): 45-51.
5. **Bodean, Oana; Bratu, Ovidiu; Munteanu, Octavian; Marcu, Dragos; Spinu, Dan Arsenie; Socea, Bogdan; Diaconu, Camelia; Cirstoiu, Monica;** *Iatrogenic injury of the low urinary tract in women undergoing pelvic surgical interventions.* Archives of the Balkan Medical Union, 2018, 53(2): 281-284.
6. **Nada, Elena-Silvia; Brinduse, Lacramioara; Bratu, Ovidiu; Marcu, Dragos; Bratila, Elvira**. *Endometriosis-associated infertility*. Modern Medicine, 2018, 25(3): 131-136.
7. **Bruja, Alexandra; Brinduse, Lacramioara; Bratu, Ovidiu; Diaconu, Camelia; Bratila, Elvira**. *Methods of transvaginal ultrasound examination in endometriosis*. Modern Medicine, 2018, 25(3): 111-116.
8. **Constantin, Vlad; Carâp, Alexandru; Bobic, Simona; Păun, Ion; Brătilă, Elvira; Socea, Bogdan; Moroşanu, Ana-Maria; Mirancea, Nicolae;** *Accurate diagnosis of sigmoid colon endometriosis by immunohistochemistry and transmission electron microscopy - a case report.* Chirurgia, 2015, 110(5): 482-485.
9. **Burney, RO; Giudice, LC;** *Pathogenesis and pathophysiology of endometriosis.* Fertil Steril, 2012, 98: 511-519.
10. **Bodean, Oana; Bratu, Ovidiu; Bohiltea, Roxana; Munteanu, Octavian; Marcu, Dragos; Spinu, Dan Arsenie; Vacaroiu, Ileana Adela; Socea, Bogdan; Diaconu, Camelia Cristina; Fometescu Gradinaru, Delia; Cirstoiu, Monica;** *The efficacy of synthetic oral progestin pills in patients with severe endometriosis.* Rev. Chim. (Bucharest), 2018, 69(6): 1411-5.
11. **Chang, Y; Tsai, EM; Long, CY; Chen, YH; Kay, N;** *Abdominal wall endometriomas.* J Reprod Med, 2009, 54: 155-159.
12. **Steck, WD; Helwig, EB;** *Cutaneous endometriosis.* JAMA, 1965, 191: 167-170;
13. **Bobic, Simona; Socea, Bogdan; Bratu, Ovidiu Gabriel; Stanescu, AMA; Baleanu, Vlad Dumitru; Davitoiu, Dragos Virgil; Dimitriu, MCT; Dumitrescu, Dan; Badiu, Cristinel Dumitru; Constantin, Vlad Denis;** *Extensive laparoscopic adhesiolysis: benefits and risks. Arch Balk Med Union,* 2019, 54(2): 320-324, doi.org/10.31688/ABMU.2019.54.2.15.
14. **Bobic, Simona; Popa, Florian; Socea, Bogdan; Carap, Alexandru; Davițoiu, Dragoş; Constantin, Vlad Denis;** *Blunt abdominal trauma and peritoneal adhesions.* Research and Science Today, 2018, 1(15): 119-31.
15. **Dimitriu, Mihai; Tarcomnicu, Iulia M; Gheorghiu, Diana; Haradja, Horatiu; Banacu, Mihail; Popescu, I; Hanganu, I; Pacu, Irina; Vladescu, Teodora; Socea, Bogdan; Furau, C; Furau, Gheorghe; Bacalbasa, Nicolae; Jitianu, Constantin Razvan; Ionescu, Cringu.** *Massive ovarian fibrothecoma.* Archives of the Balkan Medical Union, 2016, 51(2): 267-272.
16. **Ionescu, AM, Socea, Bogdan; Dimitriu, MCT; Constantin, Vlad Denis; Ionescu, Cringu Antoniu; Matei, A; Gheorghiu, Diana; Pacu, Irina; Vladescu, Teodora; Niculae, MB;** *Struma ovarii in a 56-year-old woman: a case report. Arch Balk Med Union,* 2019, 54(2): 368-371, doi.org/10.31688/ABMU.2019.54.2.24.

17. **Dimitriu, Mihai; Socea, Bogdan; Ples, Liana; Gheorghiu, Diana-Claudia; Gheorghiu, Nicolae; Neacsu, Adrian; Cirstoveanu, Catalin-Gabriel; Bacalbasa, Nicolae; Furau, Cristian George; Furau, Gheorghe Oto; Banacu, Mihail; Ionescu, Cringu Antoniu;** ***Robson criteria for cesarean section-an imperative and emergent necessity in romanian obstetrics***. Rev. Chim. (Bucharest), 2019, 70(3): 1058-1061.
18. **Khamechian, T; Alizargar, J; Mazoochi, T;** *5-year data analysis of patients following abdominal wall endometrioma surgery*. BMCWomensHealth, 2014, 14: 151-6.
19. **Ecker, AM; Donnellan, NM; Shepherd, JP; Lee, TT;** *Abdominal wall endometriosis: 12 years of experience at a large academic institution.* Am J Obstet Gynecol, 2014, 211: 363.e1-5.
20. **Khan, Z; Zanfagnin, V; El-Nashar, SA; Famuyide, AO; Daftary, GS; Hopkins, MR;** *Risk factors, clinical presentation, and outcomes for abdominal wall endometriosis.* J Minim Invasive Gynecol, 2017, 24: 478-484.
21. **Ideyi, SC; Schein, M; Niazi, M; Gerst, PH;** *Spontaneous endometriosis of the abdominal wall.* Dig Surg, 2003, 20: 246-248.
22. **Bektaş, H; Bilsel, Y; Sari, YS; et al;** *Abdominal wall endometrioma; a 10-year experience and brief review of the literature.* J Surg Res, 2010, 164: e77-e81.
23. **Esquivel-Estrada, V; Briones-Garduño, JC; Mondragón-Ballesteros, R;** *Endometriosis implant in cesarean section surgical scar.* Cir Cir, 2004, 72: 113-115.
24. **Pariza, George; Mavrodin, CI;** *Primary umbilical endometriosis (Villar's nodule) – case study, literature revision.* Chirurgia, 2014, 109(4): 546-549.
25. **Safta, Andreea Nicoleta; Constantin, Vlad Denis; Socea, Laura-Ileana; Socea, Bogdan;** *The efficiency of low molecular weight heparins in the prophylaxis of venous thromboembolic complications in general surgery.* Farmacia, 2012, 60(1): 127-137.
26. **Laslo, Crista L; Pantea Stoian, Anca; Socea, Bogdan; Paduraru, Dan N; Bodean, Oana; Socea, Laura I; Neagu, Tiberiu P; Stanescu, Ana Maria Alexandra; Marcu, Dragos; Diaconu, Camelia C;** *New oral anticoagulants and their reversal agents.* J Mind Med Sci. 2018; 5(2): 195-201.
27. **Socea, Bogdan;** *Admission criteria in Intensive Care Units following an objective evaluation or a personal decision.* Journal of Experimental Research on Human growth & Aging (JERHA), 18 Feb 2019, 2(1): 1-3.