PELVIC INFLAMMATORY DISEASE WITH ASCITES, INVASION OF THE LAST ILEAL ANSA AND PELVIC WALL, SECONDARY HYDRONEPHROSIS - CASE REPORT -

Summary:
Pelvic inflammatory disease (PID) is a nonspecific term that refers to inflammation caused by infection in the upper genital tract. It may include the following structures: endometrium (endometritis), oviducts (salpingitis), uterine serosa and broad ligaments (parametritis) and pelvic peritoneum (peritonitis). We present a 20-year-old female patient that has a low life standard and she does not respect the doctor’s recommendations after birth, addressing the hospital only in the conditions of intense abdominal pain, linked to a significant trauma she has ascites, hydronephrosis, right-sided latero-uterine mixt inhomogenous mass, 10cm diameter, very sensitive at palpation, distended ureter 20mm invasion of the last ileal ansa. The clinic and paraclinical exams lead towards a probability diagnosis. The laparotomy and the laborious surgical procedure do not certificate the diagnosis and prognosis, until the histopathological exam results arrive, which are in correlation with the evolution of the patient. The fact that “PID is basically a medical problem, but may have profound surgical implications”, checks out. We consider having dealt with a particular case of PID, rarely described in medical literature, a case that is challenging therapeutically and scientifically for the physician.

Keywords: pelvic inflammatory disease, ascites, hydronephrosis, case report

Introduction

Pelvic inflammatory disease (PID) is a nonspecific term that refers to inflammation caused by infection in the upper genital tract. It may include the following structures: endometrium (endometritis), oviducts (salpingitis), uterine serosa and broad ligaments (parametritis) and pelvic peritonitis (peritonitis). The process results from ascending infection from vagina and cervix in more than 99% of the cases, by lymphatic dissemination (postpartum, postabortalum and some device related infection) results extraperitoneal parametrical cellulites and, rarely, hematogenous routes (i.e. genital tuberculosis). The organisms may be bacteria, viruses, fungus, or parasites. More frequent are bacteria: Neisseria gonorrhoeae, Chlamydia trachomatis, Escherichia coli, streptococci and staphylococci are the most common organisms that produce pyogenic PID. The pyogenic varieties of PID tend to spread via the lymphatics and veins, leading to lymphangitis, phlebitis, and cellulites. The pyogenic organisms are more viable than gonococcus and are usually recoverable for a longer period. If natural resistance or medical interventions are
inadequate, a chronic type or subacute infection can occur.

Typically, clinical features of acute PID are fever, systemic signs of toxic illness, lower abdominal pain with tenderness in both iliac fosses, signs of peritonism. Speculum examination of vagina shows: purulent discharge from the external cervical and uterus and annexes are tender. Vagina is hyperemic and extremely warm.

Except for Neisseria gonorrhoeae, cultures are not useful for clinical management, infection is usually polymicrobial and time-consuming (by the time the results become available the disease has usually been cured with antimicrobial drug therapy). In many cases, it is not possible to grow the pathogenic microbe.

Other diagnostic signs are leucocytosis >10000/mm³, inflammatory pelvic mass on examination or ultrasonography. In patients requiring further studies, the following can be performed: culdocentesis with purulent material, pelvic CT scanning, and laparoscopy - direct visualization is the most accurate method of diagnosis.

Treatment in PID is a medical problem (antibiotics), but may have profound surgical implications. Surgery becomes necessary under the following conditions: intraperitoneal rupture of a tubo-ovarian abscess, the persistence of a pelvic abscess despite antibiotic therapy, and chronic abdominal pain. Abdominal hysterectomy with bilateral salpingooophorectomy was in the past the treatment of choice. It may be possible to make unilateral salpingooophorectomy in rupture of tubo-ovarian abscess or percutaneous or vaginal drainage of Douglas pouch, salpingostomy.

Case study

A 20-year-old female patient is admitted through the emergency room, brought by the ambulance from 50 km away, with abdominal pain, in state of consciousness, cooperative, hemodynamically stable. She is a patient during the lactating period, 7 months after her second birth, with limited social condition (unemployed, illiterate). She declares the beginning of her illness being 7 days earlier, when she suffered an abdominal trauma (kicks and punches), but the symptoms increased in the last few hours.

At hospitalization, the abdomen is sensitive and by palpation in the lower part, mimics muscular defense, intestinal transit present by auscultation, rectal tact characterized by “Douglas’ scream.” Laboratory exams: leucocytosis (18800 leucocytes/mm³), hemoglobin of 10 g/dl, urine exam: microhaematuria (5-10 red cells/field), leucocyteuria (30-40 leucocytes/field), microbial flora present, Trichomonas present. The diagnosis is that of nonsurgical acute abdomen and the decision is that of surveillance under symptomatic treatment, antibiotherapy until the result of the urine culture arrives and the proceeding of the clinical and paraclinical investigations.

Abdominal and vaginal ultrasonography and the urological exam showed moderate quantity of liquid in the Douglas’ pouch and minimal quantity of liquid in the Morrison space, medium right pleo-caliceal distension (fig. 1), urinary bladder with a thickened wall, wavy and edematous mucosa (>10 mm thick), without postmictional residue. The investigations also showed uterus with normal dimensions and normal echostructure, left ovary with no ultrasonographical

Figure 1. Abdominal US: perihepatic fluid, right hydronefrosis

Figure 2. Abdominal US: uterus with normal dimensions and echostructure, mixt unhomogenous right latero-uterin mass r 10/10cm, fluid in Douglas' pouch.
modifications, a right-sided latero-uterine mixt inhomogenous mass, 10 cm in diameter (fig. 2, 3).

The gynecological exam shows: lactation amenorrhea, (negative pregnancy test), cervix with a few unresorbable threads at the commissura with small areas of suppuration, which are suppressed; hard uterus, with the volume a little bit enhanced, touch sensitive. The right latero-uterine mass is hard and sensitive at palpation. Antibiotics are recommended, in triple association, with suspicion of PID.

We asked for an abdomino-pelvic CT-scan, inhomogeneous mass, parenchimatos, holding the contrast substance, polilobated, situated in the uterine projection area, extended towards the parameters, 11/10 cm in diameter, which determines the compression of the urinary bladder and the infiltration of its posterior wall (fig. 4). The left ureter has normal caliber, with its trajectory through the pathological pelvic formation; right ureterohydronephrosis, with the ureter in distension (fig. 5) until the crossing with the iliac vessels; there are no hepatic or splenic lesions; retropancreatic adenopathy; there is liquid in the Douglas’ pouch.

For the completion of the documentation, after 36 hours of hospitalization, diagnostic peritoneal lavage (DPL) was performed: clear, yellowish liquid, with no hematic aspect. The cytological exam showed cellular microscopy piece, with rare red cells, isolated and gathered granulocytes, and rare lymphocytes. Bacteriology: Staphilococcus aureus, sensitive to the majority of the antibiotics used in the test.

The patient state is improved, with fever above 38°C in the first 48 hours and subfeverish afterwards. The patient is able too walk and eat. The abdominal pains decrease under analgetics and antibiotic treatment: Cefort, Gentamicyn, and Metronidazol. Ultrasonographically, the tumoral mass is persistent, even increases in size, same as the right hydronefrosis.

Due to the persistence of the pelvic mass, the ascites, and the hydronefrosis, the surgical intervention is decided. Median subombilical laparotomy is performed, in the 9th day of hospitalization, in collaboration with the urologist. Clear liquid is found in the peritoneal cavity and a tumoral hard block lateral of the uterus, corresponding to the right annexa, invading the right pelvic wall (fig. 6). We found distended ureter (diameter above 20 mm) (fig. 7), invasion of the last ileal ansa, right iliac adenopathy. We consider the weakly delimitated tumor as malignant. Through combined abdomino-pelvic and anterior (Retzius space) approach, the tumor is dissected and a subtotal resection is performed (fig. 8), because of the pelvic invasion, including the ureter.
Figure 6. Intraoperative aspect: hard right latero-uterin tumoral block, invading the right pelvic wall

Figure 7. Intraoperative aspect: distended ureter, included in the tumoral block

Figure 8. Resection piece: tumor (hard on section)
The ileal segmentary resection (fig. 9) is anastomosed termino-terminal and a biopsy from the iliac nodes is performed.

The postsurgical evolution under antibiotherapy for 3 days is favorable, with intestinal transit restarted; the surgical wound has a simple evolution, with no fever. The patient checks out in the 8th day after surgery, with persistent hydronefrosis.

The histopathological exam, after another 3 days, surprises us, considering the aspect during surgery and that of the resection piece: ovarian tissue fragment massively infiltrated with lymphoplasmocytes and granulocytes, constituting abscesses hotbed (fig. 10) – inflammatory festering process, extended towards the tube, it has no tumoral aspects (fig. 11). The excised intestinal wall presents massive edema of the serosa, massive inflammatory process with lymphocytes, histiocytes, neutrocytes, and eosinocytes, forming rare festering microabscesses (fig. 12).

**Figure 9.** Intraoperative aspect: segmentary resection of the invaded ileum

**Figure 10.** Hystopathological exam HEx200 (ob 20): ovarian with acute suppurative inflammation and forming of microabscesses limited by a pyogenic membrane

**Figure 11.** Hystopathological exam HEx200 (ob 20): uterine tube with suppurative inflammation and microbial colonies

**Figure 12.** Hystopathological exam HEx200 (ob 20): intestinal wall with suppurative inflammation and massive inflammatory process with eosinocytes dissociating the muscular layer
The patient does not return for monitorization and therapy after the histopathological result. Instead, she shows up after approximately 3 months, without drug therapy, in good health and remission of the hydronephrosis.

Discussions

This case was special to us because of the difficulty to precisely diagnose this disease. This aspect has been manifesting from the admission: anamnesis and clinical exam. Further, on, uncertain data were brought by the laboratory, DPL and imagistic exams (ultrasonography and CT-scan) and even the laparotomy. In the end, only the histopathological exam and the evolution of the case clarified the diagnosis towards a particular type of PID.

In the first few hours from admittance, we obtained the following data: anamnesis (a young female patient – 20 years old, without any personal or heredo-collateral significant diseases, suffering from lactational amenorrhea, abdominal concussion 7 days old, persistent abdominal pains, increased during the day). The clinical exam was performed (patient in state of consciousness, dehydrated, hemodynamically stable, with pain in the lower segment of the abdomen during palpation, mimicking muscular defense), ultrasonographical exam (fluid in the peritoneal cavity in 2 quadrants – medium quantity\(1\), right hydronephrosis, mixed, inhomogenous, right pelvic mass) and laboratory analysis (leucocitosis, mild anemia, microhematuresis, leucocyteuresis, bacteriuria). First, we thought of hemoperitoneum by trauma or ruptured extrauterine pregnancy.

The hemoperitoneum by trauma was considered due to the anamnesis, the clinical symptoms, and especially the fluid in the peritoneal cavity, detected by ultrasonography. Never the less, we did not proceed emergency laparotomy, because of the hematological stability, the hemoglobin, and the hydronephrosis – which suggests a nontraumatic lesion. The pelvic hematocoele in case of rupture of extrauterine pregnancy was under suspicion because of the age, amenorrhea, the pelvic mass, and the fluid in the Douglas’ space. The negative pregnancy test and the gynecological exam (lactational amenorrhea) dismissed the diagnosis. In the end, DPL with clear citrin liquid, exclude any form of hemoperitoneum, traumatic or pathological.

After the first few hours from admission and especially after the DPL we considered the diagnosis to be of nontraumatic pathology: pelvic mass with right secondary ureterohydronephrosis, ascites. The differential diagnosis of this pelvic tumor was made between PID, ovarian neoplasm (“the most common origin of an extraterine mass”) and genital tuberculosis.

The diagnosis of PID was based on the gynecological exam (cervix with a few nonresorbable threads, with small local suppurations, sensitive uterus with an increased volume, sensitive right latero-uterine mass), fever and leucocytosis, bacteriological and cytological exam of the DPL liquid. A series of data, though, do not sustain this diagnosis: evening fever above 38° C, which decreased to a underfever status after 48 hours, before antibiotherapy with triple association; also leucocytosis decreased from 18800/mm\(^3\) to 14000/mm\(^3\). The usual signs of toxemia were also missing. The intraperitoneal fluid is rarely found and when existent it is described as purulent (torn tubo-ovarian abscess) or blurry (pelvic peritonitis)\(5,12\). In addition, the CT scan and the ultrasonographical exam describe the pelvic mass and the associated hydronefrosis as characteristics of a polimitotic process.

The ovarian neoplasm is most likely to appear in good general health (characterizing the initial stages of the cancer) and the aspect of the peritoneal liquid (citrin-like). The imagistic data is even more conclusive: pelvic tumoral mass, associated with ascites is probably a malignant ovarian tumor\(13,14\). The same diagnosis is suggested by the secondary hydronephrosis, associated with the phenomena, which is also a factor of reserved prognosis in ovarian tumors\(7\). The extension to the lateral pelvic wall and urinary bladder can be evaluated as well. Of course, all these signs are ones of great probability, the differential diagnosis between malignant and benign ovarian tumors being uncertain, considering only the ultrasonography\(7,9,13\).

Genital tuberculosis, despite its rareness, may be considered, because of the fever, the abdomino-pelvic pain, and the intra-operative aspect of pelvic block, including all the viscera in the region\(5\) (the pseudocarcinomatous ovarian form\(13\)). A series of data, though, dismiss this diagnosis: lack of personal and familiar history (even if found in only 55% of the cases 15), negative pulmonary radiography, biochemical exam (lack of proteins) and bacteriological exam of the ascites liquid, the lack of miliary intraperitoneal granulocytes (small nodules, tubercles)\(5,15,16\).

During surgery, a hard tumoral mass was established, right lateral of the uterus, with the following aspects pleading for a malignant process: hard tumoral block, fixed to the pelvis\(14,15\), ureterohydronephrosis, the invasion of the small intestine\(16\). The solid ovarian cancer
can be a one-sided tumor (or bilateral) having the aspect of a hard mass invading the peritoneum, associated with ascites. We were a little reticent due to the lack of the extemporaneous hystopathological exam, the normal aspect of the contralateral ovarus in the conditions of a certain local invasion and the complete absence of peritoneal serosa interest in other regions, such as the great epiploon.

In the end though, the hystopathological exam and the evolution of the patient determined us to reevaluate the case from the perspective of a particular variety of PID. We succeeded in acquiring the chart from the town hospital where the patient gave birth, 7 months prior to the admission in our service. It was a natural birth with natural deliverance, the rupture of the left commissura of the cervix. Instrumental control was practiced after deliverance and the suture of the cervix. The postpartum evolution was physiological, without any medication. The patient does not return for the suppressing of the suture threads.

The principal data that point towards pelvin neoplasm (ascites, secondary hydronephrosis, and invasion of the small bowel) are also described by some authors in PID. Ascites in the Douglas' pouch may be found in 50% of the cases with acute PID and in 10% of the chronic cases. The pelvic cellulites can determine ureteral obstruction, under the form of diffuse infection in the pelvi-subperitoneal cellular tissue or “concrete” parametritis, the latter being associated with severe overall affection – state of prostration. In some cases of PID, the inflammatory process continues, the pelvic adhesions become more pronounced, with the loss of tissue plans and involvement of the bowel, leading to occlusion.

Primary pelvic peritonitis can be found after obstetrical maneuvers, continuity solutions of the cervix. In case of a lying-in woman, the infection may lead to pelvic cellulites with a less acute evolution in rare cases, which tends towards forming a hard uneven mass of local infiltration with low resorbtion rate – “wooden phlegmon of the pelvis,” with secondary hydronephrosis. Even more so, some endometritae produced after vaginal births are considered to provoke unnoticed parametrial cellulites.

Another entity used to define the tumoral parametrial block is the tubo-ovarian complex (TOC). It is described as an aglutination of the ovarus, tube and surrounding structures, the abdominal pain being a characteristic. The aspect of the inflammation is differently appreciated by different authors; from the congestive form like an agglutination of the two organs to the surrounding tissues, to the supurative form (extended, not bordered) such as the tubo-ovarian abscess (TOA).

An appealing explanation would be that TOC and TOA represent different stages in the evolution of PID. As the infection ascends, the tube becomes hyperemic, thickened, covered with pus-forming exudate. The obstruction of the tube may occur, resulting in piosalpinx. If the infection remits in this stage, the hydrosalpinx is formed. If the peritonitis progresses, periovarian adherences may occur, with the fusion between the tube and the ovarus, resulting in TOC. A further progression of the inflammation can lead towards pus forming, in other words TOA. This kind of stage-by-stage evolution sustains the theory according to which patients can benefit from individualized therapy, taking into consideration the severity of the disease and suggests the necessity of a greater differentiation between the stages of PID.

The minimal cooperation of the patient (she addresses the hospital only in limit situations) and the inefficient dispensary system, may explain the development of a very particular form of PID, in an unusual clinical context.

Conclusions

The patient has a low life standard and she does not respect the doctor’s recommendations after birth, addressing the hospital only in the conditions of intense abdominal pain, linked to a significant trauma.

The clinic and paraclinic exams lead towards a probability diagnosis. The laparotomy and the laborious surgical procedure do not certificate the diagnosis and prognosis, until the hystopathological exam results arrive, which are in correlation with the evolution of the patient. The fact that “PID is basically a medical problem, but may have profound surgical implications,” checks out.

We consider having dealt with a particular case of PID, rarely described in medical literature, a case that is challenging therapeutically and scientifically for the physician.
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