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Case Report
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Traumatic Ovarian Fibrothecoma Avulsion in Blunt Abdominal Trauma

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Abstract

The aim of the current study is to report a case of avulsion in the hilum region of ovarian tumor identified as fibrothecoma in menopausal patient subjected to blunt trauma. The literature review did not identify any case of fibrothecoma rupture resulting from trauma.

There are few case reports on gynecological injuries resulting from trauma; however, it is important highlighting that these injuries, whenever observed, are significantly associated with pelvic (40%) and rib fractures (27%), and pneumothorax (17%) and pulmonary contusions (16%). Gynecological trauma, in separate, happens in 12% of patients with ovarian and/or fallopian tube injuries, as well as in 8% of those with uterine injuries.

Blunt abdominal trauma is the main cause of gynecological trauma. Ovaries and fallopian tubes are the main structures injured by this trauma type; such a fact is highly associated with pelvic fractures. The rupture of ovarian injuries is a rare event; ovarian fibrothecoma is an atypical tumor type.

Keywords: Gynecological trauma; Fibrothecoma; Blunt abdominal trauma; Ovarian tumor

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Introduction

There are few case reports on gynecological injuries resulting from trauma; however, it is important highlighting that these injuries, whenever observed, are significantly associated with pelvic (40%) and rib fractures (27%), and pneumothorax (17%) and pulmonary contusions (16%) [1]. Gynecological trauma, in separate, happens in 12% of patients with ovarian and/or fallopian tube injuries, as well as in 8% of those with uterine injuries.

Gynecological trauma is divided into blunt (75%) and penetrating (21%), among other types (4%) [1]. Most patients present ovarian or fallopian tube injury (74.8%), uterine injury (25.2%), or both injury types (3%), whereas vascular injury is only observed in 3% of cases [1].

Gynecological trauma is rarely observed in non-pregnant patients; it accounts for 1% of all blunt abdominal trauma cases, mainly due to protection provided by the pelvic bone framework [1,2]. The literature mainly associates gynecological trauma with rupture of the pregnant uterus, due to significant uterine-size increase and to pelvic bone projections that make patients more susceptible to trauma kinetics [1].

Ovarian rupture can be observed in trauma cases, mainly in ruptures associated with cysts (20% to 25%) and teratomas (dermoid cyst), which account for 15% of benign ovarian neoplasms [3-5].

Tumors deriving from gonadal stromal cells are uncommon; they only account for 8% of all ovarian neoplasms, which present several subtypes, such as the fibrothecoma, which is composed of stromal and theca cells [6].

The aim of the current study is to report a case of avulsion in the hilum region of ovarian tumor identified as fibrothecoma in menopausal patient subjected to blunt trauma. The literature review did not identify any case of fibrothecoma rupture resulting from trauma.

Case Presentation

MCGH is a 62-year-old woman who was run over by a motorcycle in a public road (moderate kinetics) and lost consciousness at the accident site. She was brought to the Trauma service at the Regional Hospital by first responders who had placed her on spine board and immobilized her neck with cervical collar. She presented non-obstructed airway, respiratory examination without abnormalities, 94% O_2 saturation, HR 60BPM and BP 80×60 mmHg, globose abdomen, which was painful at diffuse palpation, palpable mass in the left adnexal region, negative abrupt decompression, pain at pelvic movement to the right and locked pubic symphysis, FAST (+) in Morrison's pouch, splenorenal space and pelvis, moderate-sized adnexal mass, EFAST (-), Glasgow Coma Scale 14 (minus 1 point due to mental confusion), isochoric and photo-reagent pupils, contusion cut in the right upper eyelid, deformity due to left ankle bone exposure, as well as abrasions all over her abdomen. Previous diseases comprised SAH, diabetics and uterine myomatosis; previous surgery comprised nephrectomy on the left kidney. Initial trauma treatment comprised 1,000 ml of Ringer's lactate solution for volemic expansion purposes, antibiotics-based prophylaxis for open ankle fracture and continuous monitoring; chest and pelvis X-rays have evidenced fracture in the sacral ala and right iliac bone, as well as misaligned bone fragments. The patient also presented fracture with misaligned bone fragments in the upper ischyopublic ramus, extending to the left pubic symphysis, and fracture in the lower right ischyopubic ramus (with misalignment). She evolved to hemodynamic stability after volemic expansion. MRI of the skull, thorax, abdomen and spine was carried out based on the trauma mechanism.

MRI of the skull and chest did not show injuries resulting from trauma.

MRI of the abdomen showed right adrenal nodule (3.0 cm) with higher attenuation and no highlight in the contrast medium; it could be associated with hematoma. Moderate fluid collection in the peritoneal cavity, mainly perihepatic (Figure 1) and perisplenic fluid collections, as well as in the pelvic excavation. Cystic density formation (without highlight in the contrast medium) in the hypogastric region/left iliac fossa; it measured 13.3 cm 9.0 cm in the largest axial axes and likely had adnexal origin (Figure 2).

MRI of the spine has shown fracture of right transverse processes L5, L4 and L1.

MRI of the ankle has shown fracture and significant deviation in the lateral malleolus of the fibula, posterior dislocation of the talus in relation to the tibia, fracture in the distal tibia (medial and posterior malleoli), intra-articular bone fragments and joint effusion.

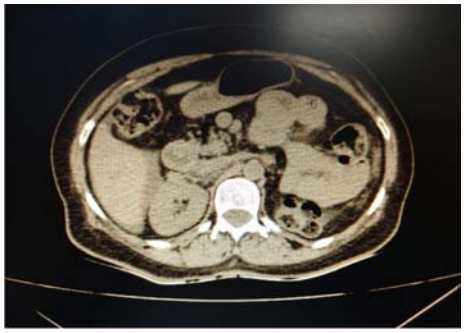

Figure 1: Free perihepatic fluid.

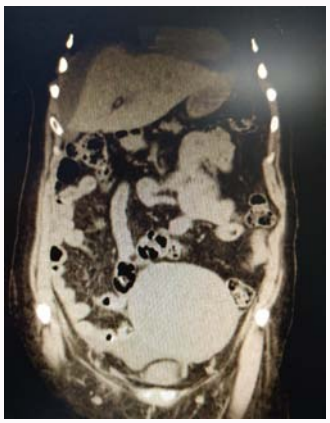

Figure 2: Adnexal cyst formation.

Figure 3: Resected ovarian tumor.

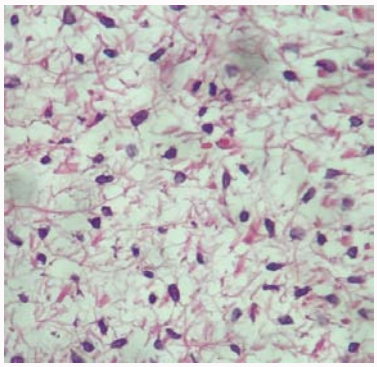

Figure 4: Luteinized theca cells.

Blood tests performed at patient hospitalization time presented the following results: Hb 10.5/Ht 29.8/Platelets 289,000/INR 1.17/Lactate 33.6/ionic calcium 1.21/pH 7.37, BE -2.9.

The patient presented clinical and hemodynamic worsening, intense abdominal pain, hypotension without tachycardia, decreased hemoglobin levels (from 10.5 to 7.9), moderate free fluid collection, and lack of solid viscera injury; emergency surgery was the treatment of choice. Diagnostic laparotomy with medium xiphopubic skin incision identified moderate amount of perihepatic blood, non-expandable or pulsatile retroperitoneal hematoma in zone II, and large tumor in the left ovary with hilum avulsion lying loose in the pelvic cavity, and active bleeding in the left ovarian artery; double

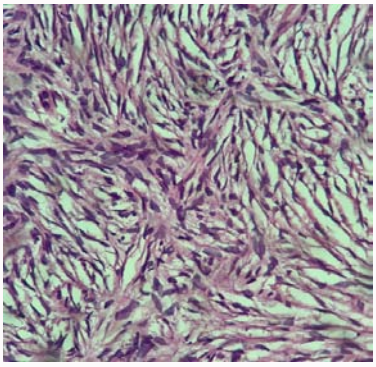

Figure 5: Fibroblastic stromal cells.

ligation of the left ovarian hilum was carried out with cotton 0 - no further injuries were identified.

Material subjected to anatomopathological analysis (Figure 3) has shown oophorectomy specimen weighing 598.0 g and measuring 13.0 cm × 10.0 cm × 6.0 cm, with finely grainy, grayish brown external surface. It presented firm consistency, grayish brown color and fasciculate appearance. Histopathological diagnosis was consistent with fibrothecoma (Figure 4, 5).

Patient presented satisfactory postoperative evolution, good dietary acceptance, lack of abdominal pain, and adequate control of hemodynamic parameters; she was discharged from the general surgery unit and referred to orthopedic care.

Discussion

Spleen, liver, and small intestine are the organs mainly affected by blunt abdominal trauma [3]. Gynecological injures are rare events in this trauma type; they account for less than 1% of cases [2]. Traumas associated with gynecological injuries are often identified in pregnant patients; they are a rare event in non-pregnant women, as shown in few cases reported in the literature [1].

The age group mostly affected by gynecological trauma comprises women in their 30s. Ovaries/fallopian tubes are the most affected organs; they are followed by uterine injury and by vascular injury of these organs [1]. This trauma type shows significant association with pelvic fractures and it accounts for approximately 40% of cases [2]. Spinal or spinal cord injuries account for approximately 30% of cases [2]. These findings are explained by the high kinetic energy associated with these traumas, since it is transmitted to the pelvic bone framework and to the lumbar spine, and it ends up partly protecting the pelvic organs [2]. Urinary tract injuries, such as the vesical and gastrointestinal ones, also show varying incidence rates [1,2].

The incidence of ovarian rupture associated with blunt abdominal trauma is remarkably rare; it is mostly observed in patients with ovarian cystic lesion and teratomas [3]. Fibrothecoma's are unusual ovarian tumors deriving from gonadal stroma cells; they can be formed by fibroblastic stromal and/or luteinized theca cells-tumors presenting both cell types are classified as fibrothecoma's and they account for 3% to 4% of all ovarian tumors. They are often benign lesions with unilateral presentation in 90% of cases and prevalent incidence in elderly women, after menopause [6].

Ultrasound examination is the best way to diagnose gynecological tumors, since their sensitivity ranges from 97% to 100%; these tumors can also be identified in routine X-rays, in abnormal intra-abdominal calcification cases [5]. The herein reported case was subjected to FAST, which evidenced free fluid within her abdominal cavity, as well as large-sized adnexal tumor limiting the pelvic view.

This tumor is identified as unilateral pelvic mass in most cases and it is associated with ascites in 40% of them - tumor size at diagnosis time is often bigger than 6 cm (in diameter). Surgical excision is the treatment of choice, since it shows the best prognosis [7]. The surgical specimen size of the herein reported case was 13.0 cm × 10.0 cm × 6.0 cm, which is compatible to tumor extensions reported in the literature.

Nowadays, physicians prefer to adopt non-surgical treatments for gynecological trauma, whenever possible, as long as important laparotomy criteria, such as hemodynamic instability, are not observed. Such findings are explained by the attempt to maintain the reproductive function in young women although surgeons often try to perform repairing procedures, whenever surgical treatment is imperative [1,2]. The risk of having to perform surgical resections, mainly hysterectomy, increases when patients present Injury Severity Score (ISS) ≥ 25 at hospitalization time. However, the literature did not show association between older patients, mainly the ones older than 51 years who show hemodynamic instability, and higher resection rates in comparison to repair rates [1,2]. According to the literature, 52.4% of ovarian and/or fallopian tube injuries were subjected to primary repair, 47.6% of cases underwent salpingo-oophorectomy [1]. Although the patient in the herein reported case was no longer at reproductive age, she presented full ovarian vascular hilum avulsion, a fact that did not allow adopting conservative therapy in her case.

Conclusion

Blunt abdominal trauma is the main cause of gynecological trauma. Ovaries and fallopian tubes are the main structures injured by this trauma type; such a fact is highly associated with pelvic fractures. The rupture of ovarian injuries is a rare event; ovarian fibrothecoma is an atypical tumor type.

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