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Giant ovarian tumors: uncommon ovarian tumors. Report of four cases.

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Keywords: giant ovarian tumors; ovary; tumors; cysts; cystadenoms.

Abstract. Over time, the large size of some tumors has been described with fascination. The term "giant" is frequently used to refer to these large gynecologic tumors. Also, to call them "giants", their measurements >10 cm, >15 cm, >20 cm are usually used, and sometimes the limits for their definition are not mentioned. Others define "large" as those >5 cm, those measuring 10-20 cm or those reaching above the umbilicus. In the English-speaking literature, there has been an agreement for more than 53 years on defining uterine or ovarian tumors weighing more than 25 lb as "giants", because, in 1971, Beacham *et al*, reviewed the uterine or ovarian tumors reported between 1946-1970, weighing 25 lb. or more. The present study aimed to report the clinical characteristics and management of four uncommon cases of giant tumors, with good surgical management, that evolved successfully and without complications. We defined as "giants", gynecologic tumors weighing 25 lb or more and the used parameter was weight, not measurements. Four tumors were benign, cystadenoma-type, and three serous. Two patients were nulliparous, and two were of indigenous race. All four patients were of extreme ages. The tumors weighed 46.738, 65.256, 26.675 and 27.116 lb (21.200, 29.600, 12.100 and 12.300 kg).

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Tumores gigantes de ovario: una rara serie de 4 casos.

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Palabras clave: tumor gigante de ovario; ovario; tumores; quistes; cistadenomas.

Resumen. El gran tamaño de algunos tumores se ha descrito con fascinación, a lo largo del tiempo. El término "gigante" se utiliza con frecuencia para referirse a estos tumores ginecológicos de gran tamaño. También, para llamarlos "gigantes", se suelen utilizar sus medidas >10 cm, >15 cm, >20 cm; y en ocasiones no se mencionan los límites para su definición. Otros definen los "grandes" como aquellos >5 cm, los que miden 10-20 cm o los que llegan por encima del ombligo. En la literatura anglosajona, ha habido acuerdo durante más de 53 años en definir los tumores uterinos u ováricos que pesan más de 25 libras, como "gigantes", ya que, en 1971, Beacham y col., revisaron los tumores uterinos u ováricos reportados entre 1946-1970, que pesaban 25 libras o más. El presente estudio tuvo como objetivo relatar las características clínicas y el manejo de 4 raros casos que, a pesar de ser tumores "gigantes", con buen manejo quirúrgico, todos evolucionaron sin complicaciones y con éxito. Definimos como "gigantes" los tumores ginecológicos que pesaban 25 libras o más y el parámetro utilizado fue el peso, no las medidas. Los 4 tumores eran benignos, de tipo cistadenoma, serosos (3). Dos pacientes eran nulíparas, 2 eran de raza indígena. Las 4 pacientes eran de edades extremas. Los tumore pesaron 46.738, 65.256, 26.675 y 27.116 lb (21.200, 29.600, 12.100 y 12.300 kg).

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INTRODUCTION

The large size of some tumors has been described with fascination over time. These include gynecological ones, of which cases of enormous growth are described, especially before the advent of ultrasound (US)[1]. The terminology of these large tumors contains very varied and confusing qualifiers, including "immense", "extensive", "voluminous", "massive", "large", "very large", "giant", "gigantic", *etc.* [1,2]. The term "giant" is often used to refer to these large gynecological tumors. Also, to call them "giants", their measurements >10 cm [3], >15 cm [4], >20 cm[5], are usually used; and sometimes the limits for their definition are not mentioned[1,3,4-8]. Others define "large" ovarian cysts as those >5 cm [4], those measuring 10-20 cm[5] or those reaching above the umbilicus[9]. In the English-speaking literature, there has been an agreement for more than 55 years on defining uterine or ovarian tumors weighing more than 25 lb., as "giants"[1,2,10]. This is because, in 1971, Beacham *et al.* [11] reviewed the uterine or ovarian tumors reported between 1946-1970, weighing 25 lb. or more. These authors noted the following: 1. they defined as "giants" only gynecologic tumors weighing 25 lb. or more; and 2. the parameter used for their definition was weight, not measurements. In clinical practice, it is difficult to gather a series of four cases of this size, for which the present work set out the aim of reporting the clinical features and the management of four cases of giant ovarian tumors (GOT) that weighed 46.738, 65.256, 26.675 and 27.116 lb (21.200, 29.600, 12.100 and 12.300 kg) (Fig. 1).

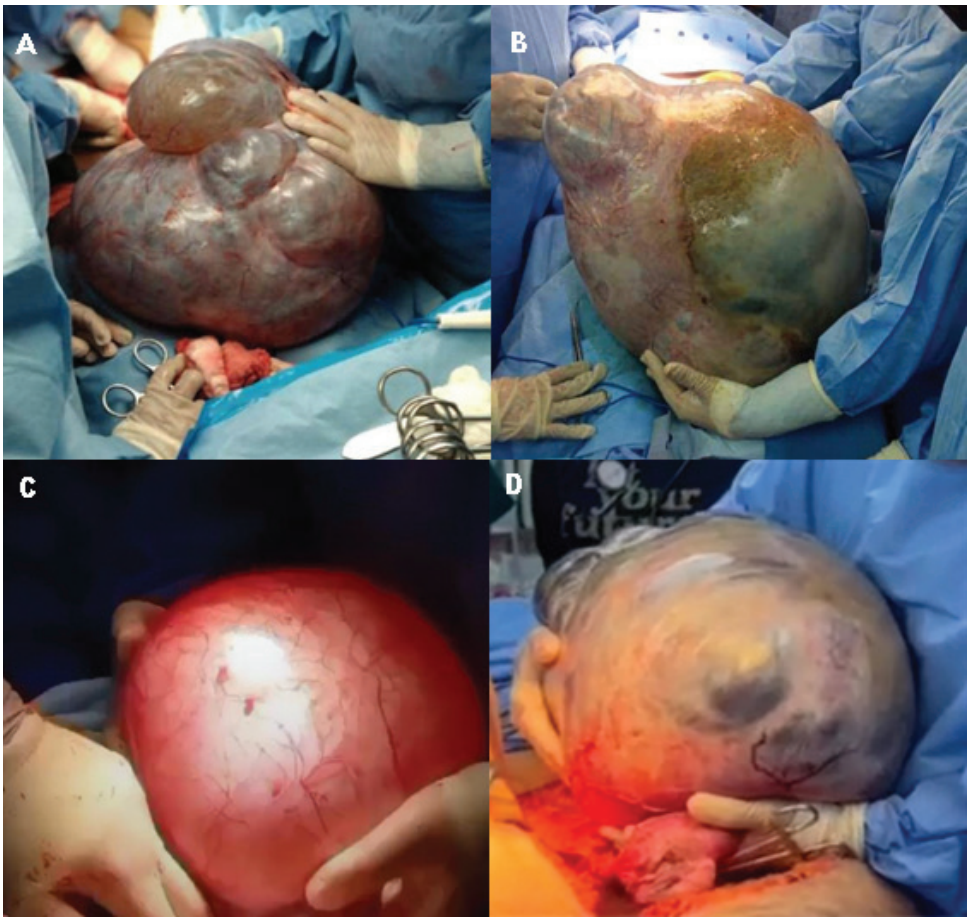

Fig. 1. Four cases of Giant Ovarian Tumor. A: Case 1, 46.738 lb or 21.200 Kg, B: Case 2, 65.256 lb or 29.600 Kg, C: Case 3, 26.675 lb or 12.100 Kg, D: Case 4, 27.116 lb or 12.300 Kg.

CASES REPORT

Case 1

MM, 57 years, consulted the Autonomous Service University Hospital of Maracaibo (OGS-ASUHM) or Maternity Dr. Armando Castillo Plaza, Venezuela, on October 29-20, due to dyspnea at medium exertion and increased volume in the abdomen, from eight months before. Genital bleeding of the meno-metrorrhagia type of moderate quantity, bright red, without clots, not fetid. Abdomen: AC: 125 cm, palpable tumor of approximately 90 x 80 cm, non-mobile, non-painful, ascites is evident; preoperative laboratory tests: normal. Abdominal-pelvic US: evidenced from the xiphoid region to the hypogastrium, a large lesion occupying liquid content, multilocated with echoes of medium echogenicity, rounded, poorly defined irregular contours, without vascularization, measurement by quadrants with an approximate diameter of 41.7 x 35.0 x 35.7 mm (Fig. 2A). Conclusion: Injury occupying the abdominal-pelvic space. Admission diagnoses (October 29-20): Giant tumor of the left ovary. 2. Chronic arterial hypertension. On November, 13-20 an exploratory laparotomy was performed with the following operative findings: 1. Giant tumor of the left ovary with cystic content, approximately 100 x 100 cm, with an estimated weight of approximately 15 kg. upon inspection. 2. Left oophorectomy was performed, and the frozen biopsy reported papillary mucinous cystadenoma, which was negative for malignancy. 3. Right ovary without alterations. 4. Abdominal

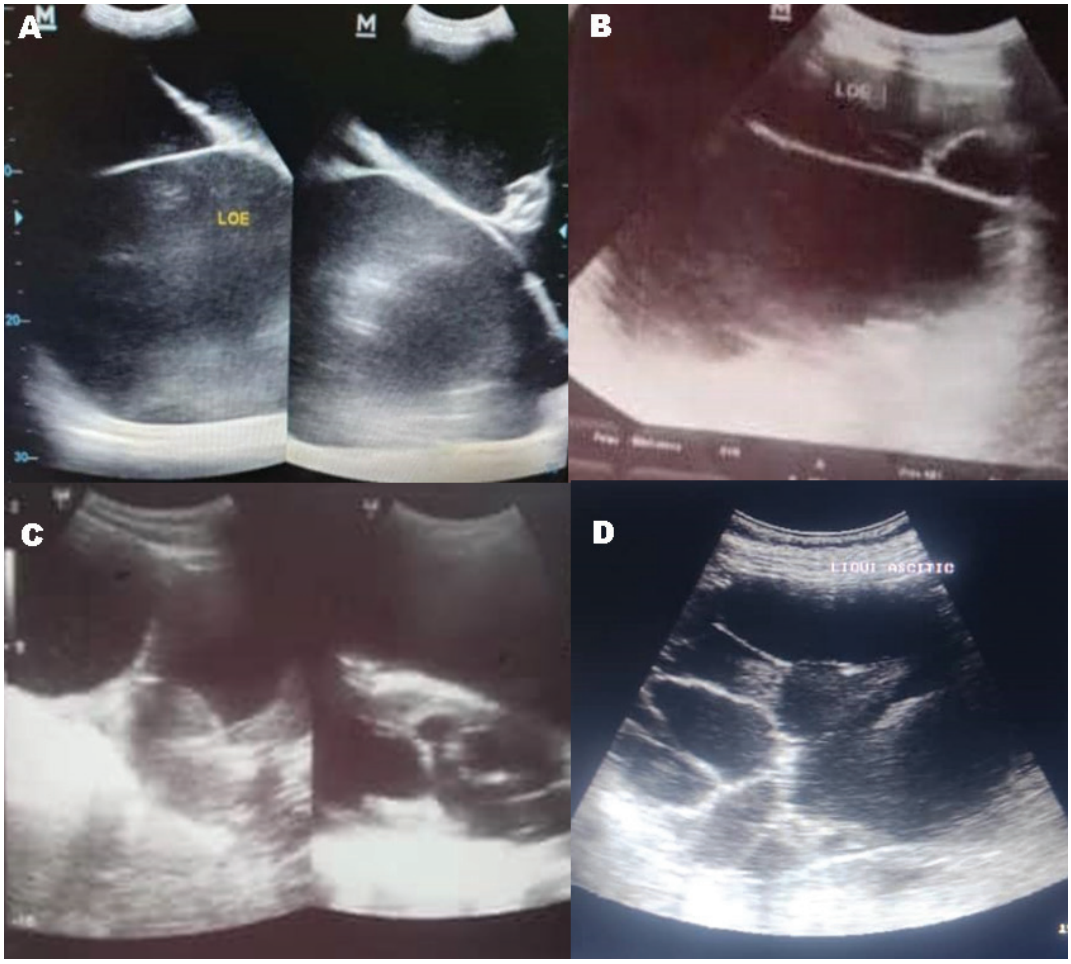

Fig. 2. Ultrasound images of four cases of Giant Ovarian Tumor. A: Case 1, B: Case 2, C: Case 3, D: Case 4.

cavity lavage was performed. 5. The abdominal cavity was closed. Postoperative evolution was expected, and was discharged on the 13th postoperative day (November, 26-20). The anatomopathological study (December, 04-20) reported a left ovarian tumor that measured 30 x 25 cm, and weighed 46.738 lb (21.200 kg), with a diagnosis of mucinous cystadenoma of the left ovary (Fig.1A). The immediate, mediate, and late (June 2021 and November 2022) postoperative controls were normal.

Case 2

SMPP, 43 years old, was admitted to OGS-ASUHM on April 08-22 for presenting dyspnea at medium exertion and increased volume in the abdomen 3 years earlier. The abdomen was globular, distended, and had an ascites wave. Abdominal-pelvic US (11, 29-19): large lesion occupying abdominal-pelvic space, of probable ovarian etiology (Fig. 2B), simple cyst of the left ovary, uterine fibroids. MRI (February, 04-20): Abdominal-pelvic space occupation lesion. Giant ovarian cyst. Tumor markers (January 24-20): β-chorionic gonadotropin, alpha-fetoprotein and CA-125 normal. Admission diagnoses (April 08-20): Giant ovarian tumor. Plan: 1. Laboratory tests 2. Admission for surgery. On April, 18-22 an exploratory laparotomy was performed with operative findings: 1. Giant right ovary tumor, with a cystic appearance, estimated weight of

approximately 30 kg. 2. Endometrial polyp of 2 x 1 cm., without macroscopic evidence of malignancy. A right oophorectomy was performed, and the frozen biopsy reported serous cystadenoma, negative for malignancy. Total abdominal hysterectomy, left oophorectomy, and appendectomy were performed. Abdominal cavity lavage was performed. Normal postoperative evolution. Discharged on the 18th postoperative day (May 06-22). Weight at discharge: 95.019 lb. Anatomopathological report (May, 20-22): tumor that measured 30 x 25 cm, weighed 65.256 lb. (29.600 kg), right ovary serous cystadenoma (Fig. 1B). Immediate and mediate postoperative medical controls were normal.

Case 3

BBIG, a 16-year-old adolescent, was admitted to OGS-ASUHM on 04, 20-22 due to increased abdominal volume. Abdomen, palpable supra-umbilical mobile tumor, not painful. β-HCG: 4.33 U/ml, CA-125: 48.70 U/ml, CA-19.99: 6.85U/ml., Alpha-fetoprotein: 4.16 ng/ml, CEA: 1ng/mL. Abdominal-pelvic US: space-occupying lesion of probable ovarian nature, rule out the retroperitoneal origin, correlate with abdominopelvic CT (Figure 2C). Abdominal-pelvic computed tomography: image of probable ovarian nature, hypodense, with regular contours, density similar to liquids, thin walls, measuring approximately 36.2 x 25 x 16.2 cm. and covering the entire abdominal and pelvic region. On 04, 21-22 an exploratory laparotomy was performed, showing a giant cystic tumor of the right ovary, which measured approximately 40 x 50 cm. and weighed 26.675 lb. (12.100 kg) (Fig. 1C). The transoperative frozen biopsy reported papillary serous cystadenoma, without evidence of malignancy. Postoperative evolution was satisfactory, and she was discharged in good general condition on 04 25, 2022, 5th postoperative day.

Case 4

L.O.A., 64 years old, consulted on March 2023 for an increased volume in the left abdominal iliac fossa region of progressive growth 6 months ago, without extenuating circumstances. Concomitantly refers to pain in that area. She was evaluated, and an abdominal-pelvic tomography imaging study was indicated, which reported a cystic tumor in the pelvic cavity. Elective surgery was planned. Ca 19-19: 15 (0-47), CA-125: 41 (0-35), verified value. Abdominal-pelvic computed tomography (CT): (March 03-23): tumor of cystic appearance, large size, occupying the pelvic cavity extending to the upper abdomen of 27x 20cm., in diameter with a displacement of neighbouring structures and highly suggestive of ovarian tumor. Liquid collection, incipient ascites at the level of the pelvic cavity. Abdominal US (march 14-23): suggestive signs of giant mucinous type cystic tumor. Minimal ascites (Figure 2D). Chest X-ray PA (July,14-23): Slight elevation of left hemidiaphragm. Cytology and ascitic fluid cell block (March, 13-23): chronic inflammatory smear with reactive mesothelial changes. Evaluation by oncologic surgery (March, 22-23): GOT, scant ascites. Dx Admission: GOT. Surgical intervention (August, 05-23): exploratory laparotomy: ovarian protocol. Findings: 50 mL inflammatory fluid, tumor of left ovary, 70 x 50 cm, firmly adherent to the left uterine horn, cystic, of mixed consistency. Uterus, right ovary, right uterine tube: normal. Procedure: Peritoneal fluid sampling, tumor exteriorization, total abdominal hysterectomy with tumor inclusion, right salpingo-oophorectomy, vaginal vault closure, right and left parietocolic slide, right and left diaphragm and prevesical fascia and Douglas pouch sampling, omentectomy, appendectomy, plane synthesis, placement of drains in subcutaneous cellular tissue, asepsis and final cure. Tumor histological type (biopsy): serous cystadenoma, benign, weight: 27.116 lb (12.300 kg) (Fig. 1D). Hospitalization for 48 hours with satisfactory clinical evolution.

DISCUSSION

GOT are uncommon in the present day due to early diagnosis and treatment [4,5,8,9,10,12]. GOT have previously been reported prior to 1929 with nine tumors weighing between 200 and 300 pounds, 87 weighing greater than 100 and 203 weighing between 50 and 100. The most remarkable descriptions of GOT are those of Spohn, in 1962, who reported 148.6 kg (328 lb) [10].

Tumors in the ovary generally are epithelial tumors. Serous hysto-type is the more common [5,9]. They are characteristically unilateral, only 5-10% presenting bilaterally [9,13], and can develop at any age; however, they are more common during the reproductive years[3,12,13]. GOT are uncommon among postmenopausal and are extremely uncommon in the pediatric and adolescent populations [6]. In this series, all four tumors were unilateral and not at reproductive ages but at extreme ages (3 over 40 years and one adolescent). Two of the four patients were nulliparous, and 2 of the 4 were large multiparas. Two of the four were of indigenous race. The four reported GOT weighed 46.738, 65.256, 26.675 and 27.116 lb (21.200, 29.600, 12.100 and 12.300 kg) (Fig. 1).

There is an extensive list of differential diagnoses: peritoneal cyst, para-ovarian cyst, appendiceal mucocele, cystic adenomyosis, liver, pancreatic or choledochal cyst, lymphocele, cystic lymphangioma, duplication intestinal cyst, bladder diverticulum; to name just a few [14].

The most common clinical signs are rapidly expanding abdominal distension and a palpable mass; they may be accompanied by nonspecific abdominal pain, vomiting, constipation, ovary torsion, and rupture [3.] Our four patients with GOT, reported increased abdominal volume.

Tumor markers play a vital role, with carcinoembryonic antigen (CEA), CA-125, and CA19-9 more likely elevated. CA-125 was performed in 3/4 patients and CA-19-9 in 2/4; were normal [5].

Needle aspiration for cytology provides inaccurate results, and owing to its associated complications, it is not recommended [13]. We did not do needle aspiration for cytology.

The primary imaging modality for evaluating ovarian and adnexal masses is US, which allows accurate identification in approximately 90% of cases [3,15]. Unfortunately, imaging studies such as US, CT and magnetic resonance (MRI) do not always determine the cyst's origin, thus limiting its diagnostic usefulness [15]. In our four patients, US and other image studies described the lesions but were inconclusive.

The choice's treatment is surgery. Removing the cyst intact for histology is the gold standard [15]. It can be accomplished by *en bloc* removal of the tumor with or without controlled drainage of tumor fluid. The lateral decubitus is the preferred position in which to operate. Resection of mass intact through a transverse elliptical incision with intense intraoperative and postoperative monitoring will provide the safest and optimal setting [4,15]. These four tumors, were removed intact *en bloc*, without fluid drainage or aspiration, and the resection of four masses was through longitudinal incisions.

Some epidemiological factors to consider before surgery include the patient's age, desire to have children, nutritional status, access to medical facilities and the surgeon's experience. Careful planning will be necessary to obtain favorable results, with a multidisciplinary approach to management, pre-and postoperatively, by the gynecologists, onco-surgeons, anesthesiologists, intensivists and dieticians [16].

Surgical management must consider various factors, especially in adolescents, where the operative strategy is to cure and maintain fertility [3,6]. During surgery, it is advisable to perform a cystectomy rather than an oophorectomy [12]. Cryopreservation

of ovarian tissue from the unaffected ovary might be an option to preserve fertility.

Many potential problems have been associated: respiratory failure, intraoperative fluids shifts, adequate exposure, orthostatic hypotension and adynamic intestine [3,12]. Despite our four cases being GOT, they all evolved without complications and were successfully managed.

Samples of peritoneal fluid for cytology must be collected. Some advocate progressive preoperative drainage [6,12]. Decompression of the cystic component before mass excision is often necessary to avoid lesions to the adjacent structures.

Laparoscopy can be used as an option for diagnostic purposes in the differential diagnosis. The tumor can be inspected, and when there are signs of malignancy, the surgeon may change the procedure to an open laparotomy. Laparoscopically in GOT, especially those that reach the umbilicus, there is a risk of perforation when the trocar is inserted [3]. Although many studies have advocated and claimed successful removal of giant ovarian cysts laparoscopically, hardly any study has claimed laparoscopic removal [9]. In these four cases, during laparotomy, we collected samples of peritoneal fluid for cytology, did not decompress the cyst before excision of the mass and did not use laparoscopy.

In summary, giant ovarian tumors are only weighing 25 lb. or more. Giants ovarian tumors are uncommon. The used parameter for their definition is weight, not measurements. With good surgical management, as in these four cases, they can evolve successfully without complications.

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Conflicts of interest

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Informed consent

An explanation and collection of informed consent to the surgical procedure were achieved by the patients, as well as the consent for publication in scientific journals.

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Author´s contributions

CB-P had the idea to make the study. CBP, RR, and BC made the study design. CBP, RR, BC and OH made the data collection, data analysis and interpretation, critical review of the intellectual content and final approval of the manuscript.

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