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# Atypical presentation of a giant mature cystic teratoma in an adolescent patient: A case report.

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## Abstract

Introduction: Mature cystic teratomas are a type of tumor derived from germ cells that develop in patients of childbearing age. The most common age at which this type of tumor appears is 20–40 years.

Clinical case: The case of an 18-year-old adolescent patient with a giant abdominal mass associated with abrupt growth is presented, and the patient's presentation was atypical given her size, which manifested as acute abdominal pain.

Treatment: The mass was resected, confirming the histopathological diagnosis of a mature cystic teratoma.

Conclusion: This type of pathology rarely presents with exaggerated growth, as in the case of the patient in question; surgical resolution remains the gold standard in treatment.

Keywords:
MeSH: Teratoma; Embryonic germ cells; Adolescent; Neoplasms; Case Reports.

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## Introduction

Mature cystic teratomas are the most common ovarian germ cell tumors and the neoplasms most commonly diagnosed in adolescents [1]. These tumors are heterogeneous and derived from the primitive germ cells of the embryonic gonad [2]. The size of these tumors is variable. In most cases, tumors are between 5 and 15 cm in diameter, and the greater the diameter is, the greater the risk of malignant transformation [3]. This article aims to report the case of a patient with a giant mature cystic teratoma with atypical presentation.

## Case report

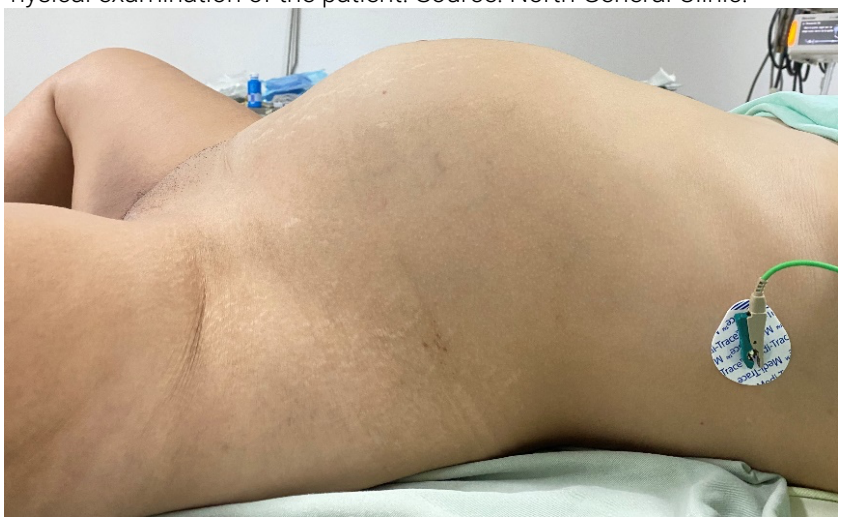
An 18-year-old woman consulted for abdominal pain for approximately one week, which intensified in the last two days. The pain was associated with the abrupt growth of a palpable mass that occupied the entire abdominal cavity. Additionally, the patient presented dyspnea on medium exertion and occasional emetic episodes. She denied vaginal discharge. Within her obstetric-gynecological history, she had a previous pregnancy that ended in a cesarean section due to failed induction. The menstrual cycles were irregular. The patient did not

remember the date of her last menstruation. The patient underwent a Pap test one year earlier, and the cytology was normal. Upon physical examination, an enlarged abdominal perimeter was observed, with no signs of peritoneal irritation at the time of evaluation and evidence of a palpable abdominal mass that reached the epigastrium approximately 30 cm from the pubic symphysis; the mass was described as having regular edges and as mobile, not adhesive (Figure 1).

## Diagnostic workshop

The patient was evaluated in the emergency department under the diagnosis of an adnexal mass, and transvaginal gynecological pelvic ultrasound, abdominal ultrasound, and paraclinical studies were requested. The pelvic ultrasound report was "multilocular cystic lesion at the abdominopelvic level of probable ovarian origin," and the abdominal ultrasound report was "large abdominopelvic mass of probable ovarian neoplastic origin." The following paraclinical tests were requested: alpha-fetoprotein: 348 ng/ml, carcinoembryonic antigen: 2.76 ng/ml, CA-125: 42 IU/ml, lactic dehydrogenase: 213 IU/L, and CA19-9: 38 IU/ml. Due to the elevation of alpha-fetoprotein levels relative to its average cutoff point of 300 ng/ml, immature teratomas were included in the differential diagnosis, which was subsequently ruled out. To complement the ultrasound findings described previously and to define the best surgical approach, an MRI of the abdomen with a contrast agent was requested (Figure 2).

**Figure 1.** Physical examination of the patient. Source: North General Clinic.



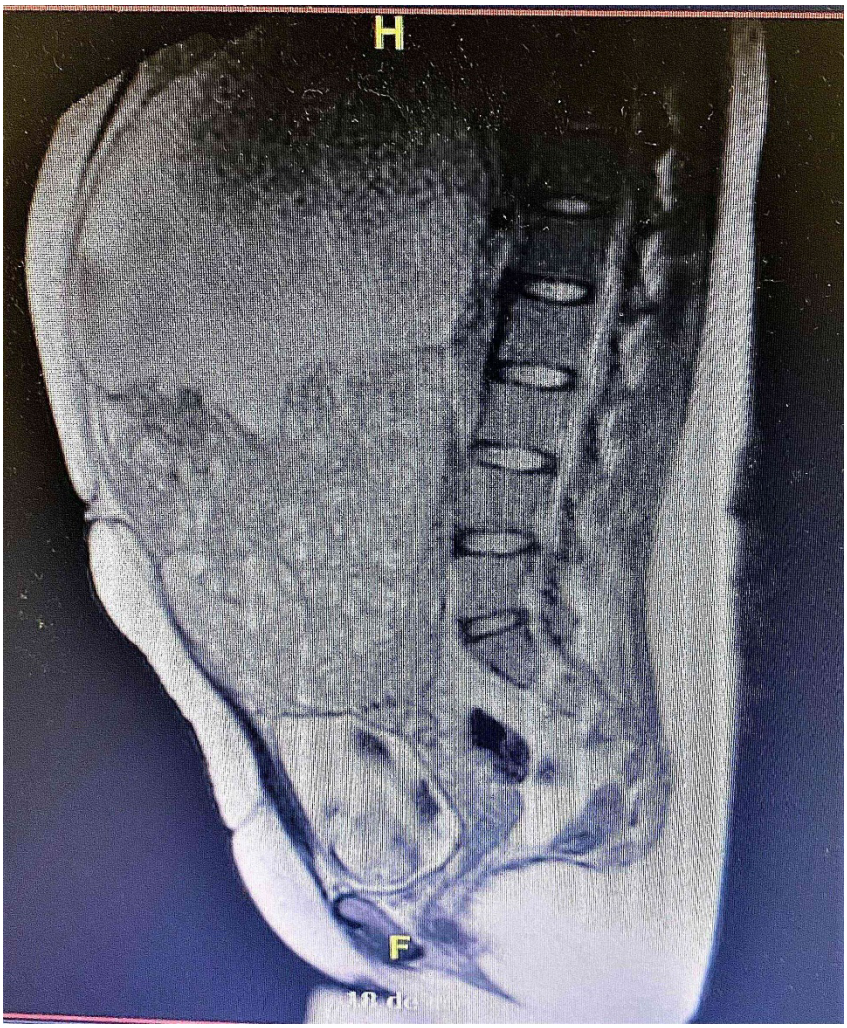



Figure 2. Magnetic resonance imaging of the abdomen in a sagittal section shows evidence of a giant tumor mass. Source: North General Clinic.

The MRI report revealed a "large space-occupying lesion" with mixed signals with cystic and solid components occupying most of the pelvis; this lesion measures 190 mm × 150 mm in its largest diameter and shows heterogeneous enhancement, most likely dependent on the left annex. No intra-abdominal or extra-abdominal lymphadenopathy was documented."

## Evolution and treatment

The patient underwent an exploratory laparotomy in which a supra- and infra-umbilical median incision was made, and a mass with macroscopic characteristics that were oval, smooth, and shiny was found; the mass measured approximately 250 mm × 200 mm and was dependent on the left ovary with torsion (Figure 3). A frozen biopsy was performed with a preliminary report of mature cystic teratoma (Figure 4). An omentum biopsy and pelvic lavage cytology were also performed, the subsequent results of which were negative for malignancy. The excision of the cystic teratoma was performed without intraoperative complications. The patient was discharged 48 hours after surgery without complications during the postoperative period. After two weeks, the patient attended an outpatient check-up, where the wound had healed and her initial symptoms improved.

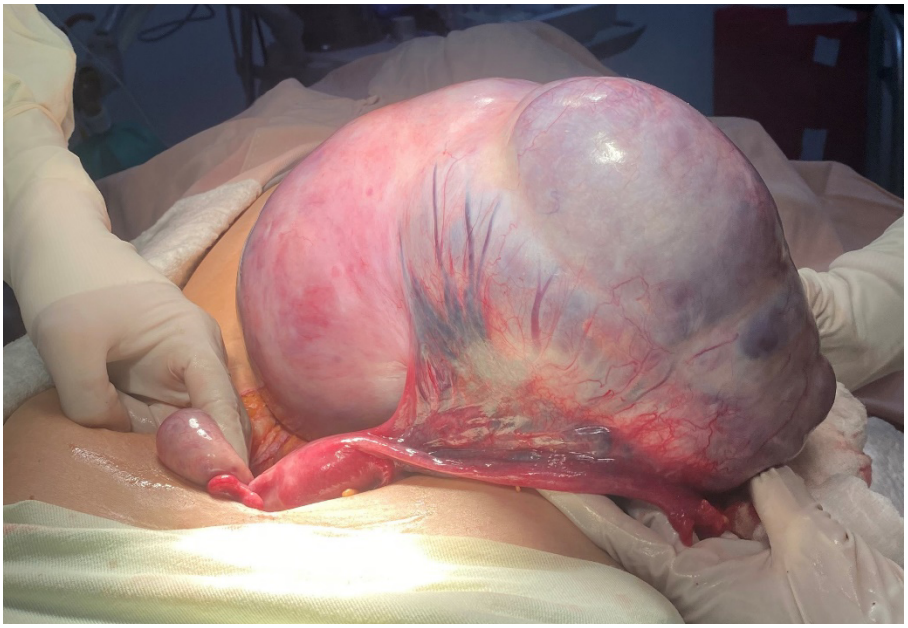


**Figure 3.** Intraoperative findings of exploratory laparotomy. Source: North General Clinic.

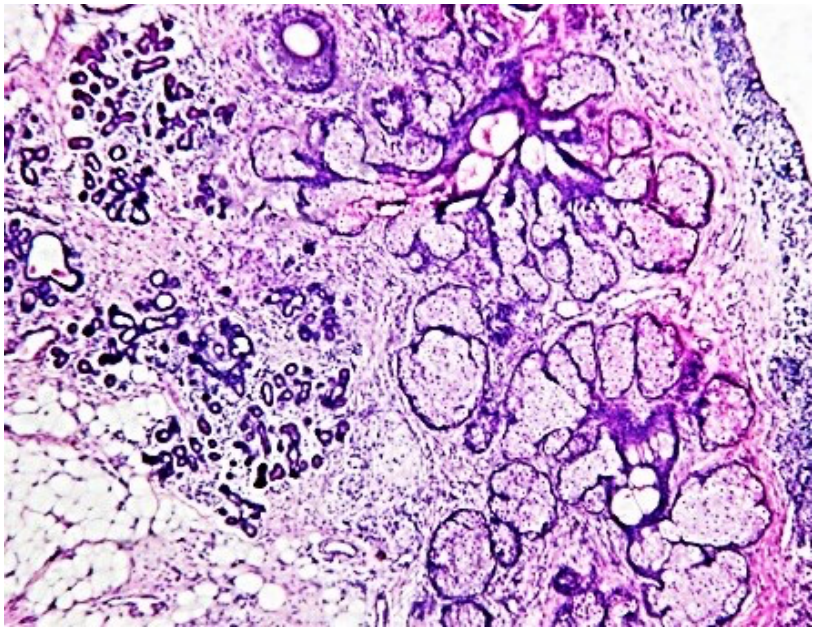


**Figure 4.** Hematoxylin-eosin frozen biopsy microscopy Source: North General Clinic.

## Discussion

Because teratomas begin to form from a cell line that can become any other type of cell, these tumors can be formed inside many tissues, including the skin, teeth, hair, brain, and muscles [4]. These masses are rarely significant and measure less than 15 cm [5]; however, our patient's mass reached more than 20 cm, making it unusual at presentation. One of the strengths of this case report is that there is little evidence in the literature regarding a tumor of this size, which makes this case report interesting from a scientific point of view. On the other hand, an essential limitation of this report was the time it took to report the definitive histopathological report (2 weeks).

The complications primarily associated with this entity are ovarian torsion, malignant degeneration, rupture of the mass capsule, and infection in very few cases, as described in the literature [6]. Likewise, patients are usually asymptomatic. However, patients who present symptoms are characterized by abdominal pain, a sensation of abdominal fullness associated with nausea, and emetic episodes due to the occupying mass [7].

Ultrasound is a noninvasive and susceptible procedure for detecting these lesions. Among the ultrasound findings commonly associated with the diagnosis of this pathology, we have the "tip of the iceberg sign," an echogenic image with a large posterior acoustic shadow at the ovarian location, which prevents visualizing the structures or elements located behind the same structure and that corresponds to the interface of the different components of the tumor [8].

CA19-9 is the most reliable biomarker of mature ovarian teratoma and is still used to distinguish between benign tumors and malignant pelvic masses [9]. The tumor marker most related to immature teratoma is elevated alpha-fetoprotein, which is why it was initially included in the differential diagnoses of our patient [10]. However, it must be noted that tumor markers are not specific and may be associated with other pathologies.

Worldwide, complete surgical resection is used for this pathology (even more so in this particular case, given the size of the lesion and the symptoms presented by the patient). However, it is necessary to consider the surgical indications: a symptomatic mass, suspicion of malignancy, an associated risk of torsion or infection, or a size greater than 10 cm [11]. There needs to be more clarity about the type of surgical approach used: laparoscopy vs laparotomy. According to the literature, the laparoscopic approach is generally considered the gold standard for management [12]. In the present case, this approach could not be offered due to the excessive size of the mass corresponding to the atypical presentation.

Complete resection should always be favored, given the risk of teratoma recurrence and the risk of developing growing teratoma syndrome if it is not entirely removed [13].

## Conclusions

In conclusion, mature teratomas continue to be frequently diagnosed in young patients; therefore, it should not be forgotten that they exist and that possible complications of rupture or torsion are frequent. Many times, these masses grow excessively, as in the case of our patient, where surgical management undoubtedly continues to be the cornerstone of treatment.

### Abbreviations

There are no abbreviations.

## Administrative information

### Additional Files

None declared by the authors.

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### Author contributions
Jaime Andrés Machado Bernal: Conceptualization, data curation, formal analysis, acquisition of funds, research, writing - original draft.
Dewi Isabel Acosta Mendoza: conceptualization, data curation, formal analysis.
All the authors read and approved the final version of the manuscript. All the authors read and approved the final version of the manuscript.

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### Availability of data and materials
The data are available upon request to the corresponding author. No other materials were reported.

## Statements

### Ethics committee approval
Clinical cases were not needed.

### Consent for publication
The authors consent to the publication of images, photographs, and X-rays from the patient.

### Conflicts of interest
The authors declare that they have no conflicts of interest.

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