Primary retroperitoneal mature cystic teratoma in an adult: A case report

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Article history:
Received 26 June 2016
Received in revised form 4 October 2016
Accepted 6 October 2016
Available online 11 October 2016

Keywords:
Primary retroperitoneum
Case report

ABSTRACT

BACKGROUND: Mature cystic teratoma is one of the most common tumors of the ovaries; however, primary retroperitoneal lesions are rare entities in adults.

CASE SUMMARY: We report a case of a 33-year-old woman noticing a mass in her epigastric and left upper abdominal region without any specific signs and symptoms. Radiological evaluation revealed a retroperitoneal mass with extension from the posterior aspect of the pancreas to the pelvic cavity, composed of calcifications and cystic elements.

CONCLUSION: The tumor was resected through a midline laparotomy and the pathology report confirmed the diagnosis of a mature cystic teratoma with no evidence of malignancy or immature components.

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1. Introduction

Composed of a mixture of dermal cells derived from the three germ cell layers (ectoderm, mesoderm or endoderm), primary mature teratomas are rare neoplasms characterized by inclusion of any well-differentiated parenchymal tissues [1]. These tumors are most commonly found in testes and ovaries but extragonadal sites have also been reported including intracranial, cervical, mediastinal, retroperitoneal and sacrococcygeal [2–4]. Accounting for only 4% of all primary teratomas, retroperitoneal lesions are rare and more common among children rather than adults [5]. We report a case of a huge asymptomatic primary retroperitoneal mature cystic teratoma in a 33-year-old woman.

2. Case report

A 33-year-old woman presented with a mass in her upper abdomen. She first palpated the lesion two and a half years ago after undergoing a caesarean section. Recently she noticed an increase in the size of the mass and referred to the clinic. She denied any associated symptoms including fever, loss of appetite, weight loss, nausea, vomiting or pain. She had no underlying diseases. The only surgery she had undergone was the mentioned caesarean section two. She denied taking any medications, smoking or alcohol consumption and her family history was unremarkable.

She was normotensive with a blood pressure of 110/70 mmHg, her pulse rate was 76 per minute, her respiratory rate was 16 per minute and her oral temperature was 36.8 °C. Her physical examination was unremarkable except for a firm, non-mobile fullness palpated in her epigastric region and left upper quadrant of the abdomen without any tenderness or abdominal guarding. The extent of the mass could not be established. Laboratory results were as follows: HGB = 11, Cr = 1, CA19–9 = 0.6, CEA = 76.6 and CA125 = 78.7.

A Computed Tomography Scan (CT) was performed for the patient that revealed a large retroperitoneal tumor posterior to the pancreas and anterior to the left kidney, extending to the pelvic cavity. The stomach and the pancreas were pushed forward and the mass was compressing on the small bowel loops. The tumor contained calcifications along with heterogeneous cystic lesions measuring 210 × 154 mm (Fig. 1B). Pancreatic pseudocyst and ovarian tumors were the most probable diagnoses suspected based on the findings of the CT scan.

The patient underwent laparotomy and through a midline incision above and below the umbilicus exploration was performed. A huge retroperitoneal mass was observed. Liver, spleen, small intestine, peritoneum and the pelvic cavity were thoroughly examined for metastases and none were found. No ascites were observed and based on the findings a decision was made for total excision of
the tumor. First the adhesions were released and the tumor was separated from the descending colon, splenic flexure, transverse colon, surrounding tissues and mesocolon, gerota fascia, posterior aspect of the pancreas, splenic and superior mesenteric veins,
medial aspect of inferior vena cava, aorta, left ureter and left renal vein. Finally a 35 x 35 cm mass was totally excised and sent to the lab for pathologic evaluations (Fig. 1A).

The patient was followed 2 weeks after the surgery, during which she developed no significant complications. Pathology assessment reported a neoplasm composed of various tissues including skin, respiratory mucosa, gastrointestinal mucosa, fat, smooth muscle, hyaline cartilage, peripheral nerves and ganglions along with vast areas indicative of previous bleeding with aggregation of hemosiderin. The final diagnosis was made as a mature cystic teratoma with no evidence of malignancy or immature components. Fig. 2 depicts the timeline of the patient's presentation to her final diagnosis. No follow up laboratory tests were ordered for the patient.

3. Discussion

Retroperitoneal teratomas in adults are very rare and to date, only a few cases have been reported in the literature [1]. These masses more commonly develop at the left side area symptomatic and incidentally found on routine examinations [5]. The incidence of retroperitoneal mature cystic teratomas peaks twice in the first 6 months of life and in early adulthood [1]. Accounting for 1–11% of all primary retroperitoneal neoplasms, primary retroperitoneal teratomas are very rare and only 10–20% of these tumors occur in adults older than 30 years of age [6]. Therefore, the presented case is diagnosed with a very rare entity. The source of the retroperitoneal teratoma in our patient could not be identified and similar to other true primary retroperitoneal teratomas in adults it was located in above the left kidney [1], although it was extending to the pelvic cavity. The malignancy rate of these tumors in adults is significantly higher than children (26% vs. 7%) [1].

Various serum tumor markers can be elevated in retroperitoneal teratomas such as AFP, CEA and CA 19–9 [7,8]. These markers can be used for monitoring successful treatment or relapse of the tumor in the patients. That was the reason why these markers were checked in the presented patient prior to the surgery.

As for the diagnosis of these tumors, radiographic evaluations are of a great importance. Plain radiograms can be used for differentiating calcified components of the teratoma, ultrasound can distinguish between cystic and solid components and CT scan can differentiate between adipose tissue and bone masses [9]. However, the best modality that can provide better resolution of the soft tissues, precisely identify benign and malignant features and can help in staging of the tumor is MRI. Other than their diagnostic roles, these radiologic modalities are of utmost importance in planning the surgical treatment [10].

Surgical removal of the tumor is necessary for reaching a definitive diagnosis and is the main treatment option. The overall five-year survival rate after complete surgical excision of the tumor is approximately 100% [11]. These lesions are greatly resistant to radio and chemotherapy and these treatments are only used for teratomas with malignant features [1]. Although mature teratomas are benign in nature, but the patients must be closely monitored since malignant transformation occurs in 3–6% of the subjects [12].

4. Conclusion

Primary retroperitoneal teratomas rarely occur in adult patients and are typically asymptomatic. Although the diagnosis can be made preoperatively by the characteristic of the tumor on the imaging modalities, but a definitive diagnosis is established upon histologic assessment. Surgical resection is the mainstay in the treatment of mature retroperitoneal teratomas.

Conflicts of interest

All authors declare that they have no conflict of interest.

Sources of funding

There isn’t any fund in our study.

Ethical approval

This case report study presented and approved on the ethics committee of general surgery department of Loghman hakim hospital (Shahid Beheshti university of medical sciences)

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Ethical considerations

The present case has been reported in line with the CARE criteria [13]. Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Consent

Written informed consent was obtained from the patient and attached to submission files.

Author contribution

Hassan Peyvandi, Fahimeh Arsan, Athena Alipour Faz, Maryam Yousefi contributed to study design, analysis and interpretation of data, drafting the article and approved the final version for publication.

Registration of research studies

Case report study is not in study type list of http://www.researchregistry.com.

Guarantor

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Acknowledgement

The authors would like to thank for collaboration of Clinical Research Development Center in Loghman Hakim hospital, Tehran, Iran.

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