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Case Report

CASE REPORT

Simultaneous multiple organs immature teratomas: a case report and literature review

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Abstract

Primary simultaneous multiple organs teratomas are extremely rare. They usually arise in the gonads, and only 1–3 % of them arise in the mediastinum. We present a case of simultaneous multiple organs immature teratomas who was admitted to Razi hospital because of cough, dyspnea, and left-side supraclavicular mass. Computed tomography (CT) showed a big mass with multiple high densities, nodular, semi-solid, heterogenic structures on the left side of the neck, left-side anterior mediastinum, right-side middle mediastinum and right-side suprarenal region. CT-guided needle biopsy was performed and histopathological study showed immature teratoma. After performing neoadjuvant therapy, the tumors were removed. The patient underwent chemo radiation therapy on the mediastinum and abdomen. On 6-months follow-up, he was asymptomatic. This case is being reported because of the rarity of multiple organs immature teratomas and informing other clinicians about managing these cases.

INTRODUCTION

Teratomas are germ cell tumors and commonly composed of multiple cells which derived from one or more of the three germ layers. They usually arise in the gonads. Only 1–3 % of all germ cell tumors arise in the mediastinum and they are account for 15 % of adult anterior mediastinal masses. They are equally presented in men and women between the ages of 1 and 70 years, the average age is 28-years old [1, 2]. Germ cell tumors range from benign, well-differentiated or mature usually as cystic or solid lesions, and malignant or immature [2, 3]. We found only three cases of extra gonadal multiple organs immature teratomas- in ovary with mediastinum, liver with mediastinum, and in different parts of brain [4–7]. We report an extremely rare case of 26-year-old man with cough, dyspnea, abdominal pain, neck mass and harboring synchronous immature teratomas in his left side of neck, left-side anterior mediastinum, right middle mediastinum and abdomen.

CASE REPORT

A 26-year-old man admitted to Razi hospital with cough, dyspnea and left-side neck mass (Fig. 1). Physical examination revealed a multi lobulated, firm mobile and non-tender mass in the left side of neck. Physical examination of other organs was normal. Chest X-ray showed a mass in anterior and right

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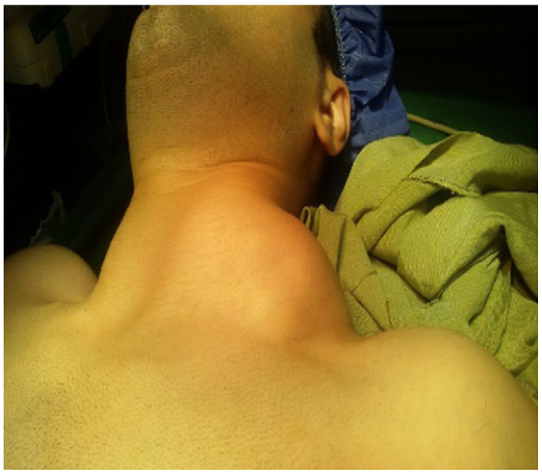

Figure 1: Neck mass.

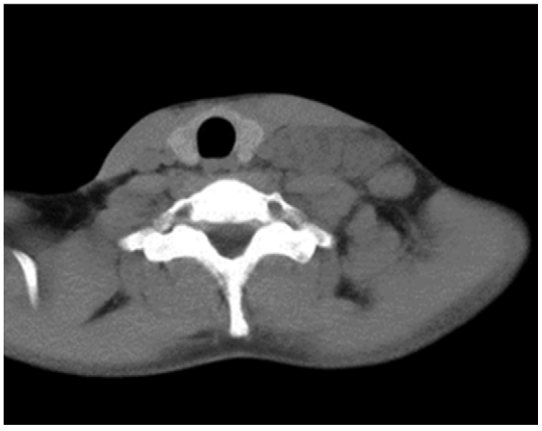

Figure 2: CT scan of neck showing an ill-defined lobulated mass in the left side of neck. The masses contents were heterogeneous.

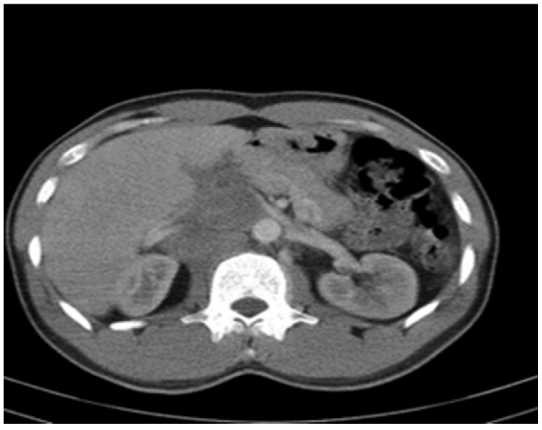

Figure 3: CT scan of chest showing a well-defined mass in the left side of anterior mediastinum. The masses contents were heterogeneous.

middle mediastinum. Ultrasound of abdomen showed a large nonhomogeneous mass measuring approximately 20 cm × 18 cm × 8 cm seen in the right upper quadrant and extending to the sub hepatic region. Biochemical testes were normal. AFP (Alfa Feto Protein), CEA (Carcinoembryonic Antigen) and B-HCG

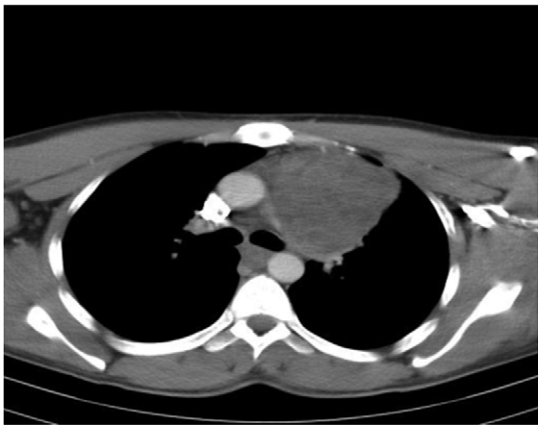

Figure 4: CT scan of chest showing a well-defined mass in the right side of right middle mediastinum sub-carina region. The masses contents were heterogeneous.

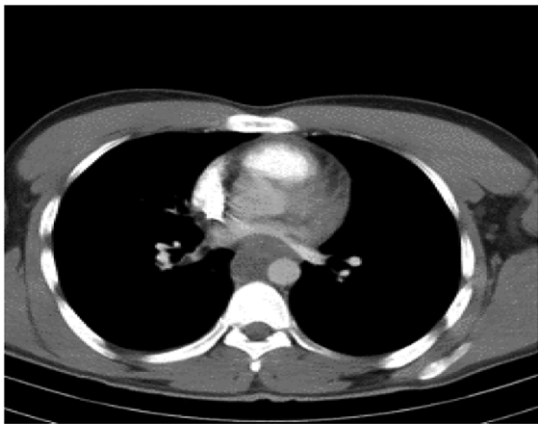

Figure 5: CT scan of abdomen showing an ill-defined mass in the sub hepatic and paravertebral region. The masses contents were heterogeneous.

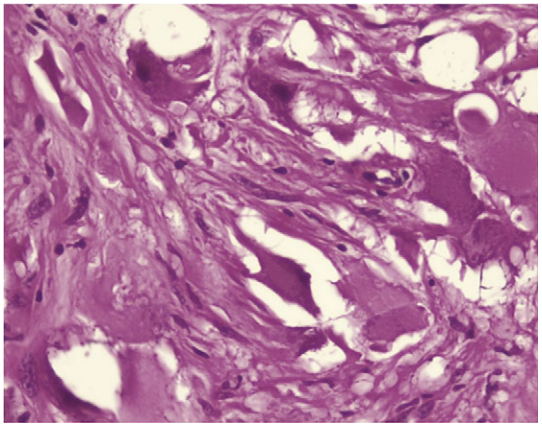

Figure 6: Showing pathology of neck mass.

(Beta-Human Chorionic Gonadotropin) values were normal. Computerized tomography (CT) of neck, chest and abdomen revealed a multiple lobulated mass in left side of neck, a well encapsulated solid mass lesion 12 cm × 8 cm × 6 cm in the left anterior mediastinum and another mass in the right middle mediastinum in the right sub-carina region and a mass in the right side of abdomen. All masses lesions were heterogeneous

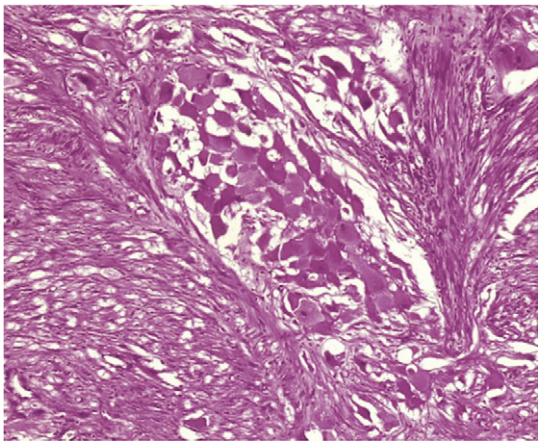

Figure 7: Showing pathology of neck mass.

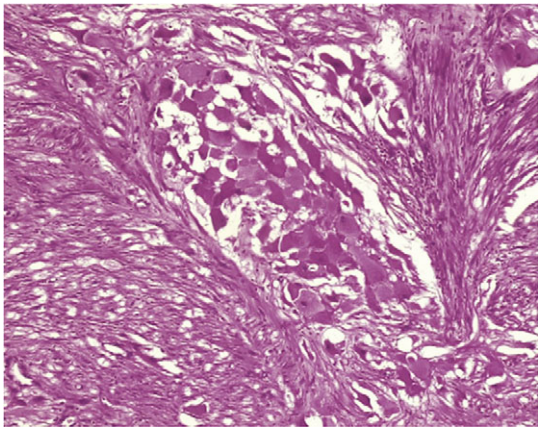

Figure 8: Showing pathology of neck mass.

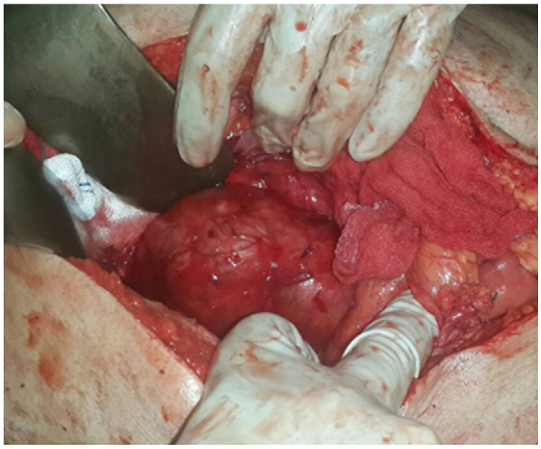

Figure 9: Showing mass during surgery.

with predominant fat density and no signs of chest wall or pericardial invasion or focal calcification (Figs 2–4). Ultrasounds of testis, pelvic and inguinal regions were normal. Core needle biopsy of the neck, left mediastinum and abdomen masses was done by CT guided. Diagnosis was immature teratoma. Oncology consultation was performed and neoadjuvant therapy had been done

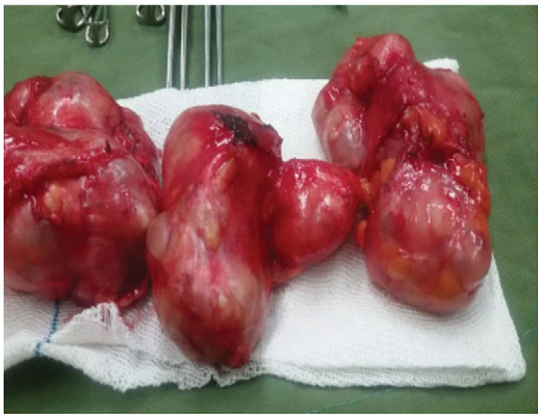

Figure 10: Showing mass after surgery.

with Etoposide, Ifsofamid and Cisplatin according to their recommendations. Twenty days after neoadjuvant therapy, neck dissection was done and all masses were removed completely (Figs 5 and 6). Histopathological examination of three lesions showed immature cystic teratomas (Figs 5–7). After four weeks—with median laparotomy—a large sub hepatic mass which extending from liver up to right kidney, adherent to aorta, kidney and inferior vena cava, was excised with small residue on the aorta and inferior vena cava. Histopathological examination of mass showed an immature teratoma (Fig. 8). Patient underwent chemo radiation therapy on the mediastinum and abdomen. He had an uneventful post-operative period recovery, and on 6-months follow-up, he was asymptomatic.

DISCUSSION

Origin of teratomas is all of three germ layers [1, 2]. They are commonly classified benign or mature and frankly malignant or immature. This classification is on the basis of the presence of neuroectodermal elements within the tumors [2, 5, 7]. Malignant teratomas usually have more immature elements [1, 2]. Only 5% of all teratomas occur in the head and neck region, predominantly in the cervical region [2, 8]. Cervical teratomas are almost always benign and congenital in children, but they may be locally aggressive [8, 9]. Abdominal and pelvic immature teratomas are very rare in adults. Immature abdominopelvic extra gonadal teratomas are rare and most frequently occur in middle-aged females [3, 9]. They usually occur in the presacral space [3, 8, 9], but can also arise in the ischiorectal space and perineum [3, 9]. Our case was a 26-year-old man who had immature teratomas which were not congenital. Teratomas can present with respiratory distress. In these cases, immediate excision is required and surgery is curative [3–5, 9, 10]. In presented case, total excision neck and mediastinum masses were performed (Figs 9 and 10). Teratomas in the thoracic cavity usually occur in the anterior mediastinum [1, 7]. In an analysis of 142 cases of teratomas in childhood, all the 14 mediastinal teratomas were in the anterior mediastinum [9]. Symptoms are related to their mechanical effects: including chest pain, cough, dyspnea, recurrent pneumonitis and hemoptysis [1, 2, 9, 10], but our case presented only dyspnea.

Mediastinal teratomas are also often asymptomatic and occasionally discovered incidentally on chest radiograph [1, 2, 9]. Usually in benign teratomas, AFP and B-HCG are normal and elevated levels may be indicative of malignancy [2, 4]. In our case, these markers were in normal ranges. CT usually reveals complex

appearance [10]. Magnetic resonance imaging can differentiate teratoma from others mediastinal cyst [3]. Radiological differential diagnoses of teratoma are lymphangioma, venous malformations with phleboliths, dermoid, neurenteric cysts, tornwaldt cyst and basal meningocele [4, 9, 10]. Mature teratomas are removed by simple cystectomy [1, 2, 4]. If immature elements are found, the patient should undergo a standard staging procedure [2–4]. The treatment of mature and immature teratomas is predominantly complete surgical excision [2, 3, 5, 8, 9]. With good presurgical planning and complete surgical excision, recurrence and complications will be less [1, 2, 4, 8].

Regular and long-term follow-up is necessary to detect early recurrences because it can occur in <10% of operated patients [8].

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CONFLICT OF INTEREST STATEMENT

No conflicts of interest.

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GUARANTOR

Dr. Manouchehr Aghajanzadeh and Zakiyeh Jafaryparvar are the guarantors of the manuscript

ETHICAL APPROVAL

Informed consent was obtained from the patient at the time of admission to the hospital, in order to anonymously use the medical data for scientific purposes and all information reported generally without mentioning patient's name.

REFERENCES

1. Yalagachin GH. Anterior mediastinal teratoma—a case report with review of literature. *Indian J Surg* 2013;**75**:182–4.
2. MoranCA S. Primary germ cell tumors of the mediastinum. I. Analysis of 322 cases with special emphasis on teratomatous lesions and a proposal for histopathologic classification and clinical staging. *Cancer* 1997;**80**:681–90.
3. O'Donovan E, Thway K, Moskovic E. Extragonadal teratomas of the adult abdomen and pelvis: a pictorial review. *Br J Radiol* 2014;**87**:20140116.
4. Tauro LF, Shetty P, Kamath A, Shetty A. Double whammy-mediastinal and ovarian teratoma: a rare clinical co-existence. *J Thorac Dis* 2012;**4**:434.
5. Cöl C. Immature teratoma in both mediastinum and liver of a 21-year-old female patient. *Acta Med Austriaca* 2003;**30**:26–8.
6. Ganesan D, Sia SF, Narayanan V, Kumar G, Lum L, Chan L, *et al*. Multicompartmental congenital intracranial immature teratoma. *Neurol Asia* 2013;**18**:117–21.
7. El Kalla S, Abdul-Hameed M, Al Ashbal A, Menon N. Posterior mediastinal teratoma with abdominal extension. *Thorax* 1990;**45**:773–4.
8. Sellami M, Mnejja M, Ayadi L, Charfeddine I, Boudawara T, Hammami B, *et al*. Congenital teratoma of the neck: a case report and literature review. *Egypt J Ear Nose Throat Allied Sci* 2015;**16**:101–4.
9. Chakravarti A, Shashidhar T, Naglot S, Sahni J. Head and neck teratomas in children: a case series. *Indian J Otolaryngol Head Neck Surg* 2011;**63**:193–7.
10. Outwater EK, Siegelman ES, Hunt JL. Ovarian teratomas: tumor types and imaging characteristics. *Radiographics* 2001;**21**:475–90.