A Huge Intrapericardial Teratoma: A Case Report

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K **:** Teratoma; oracic computed tomography; Pericardial e usion

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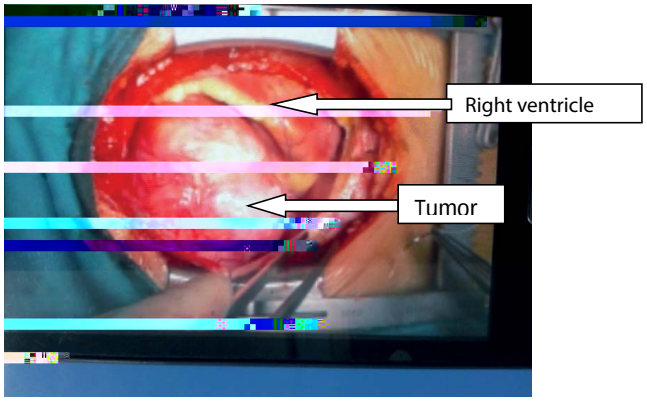
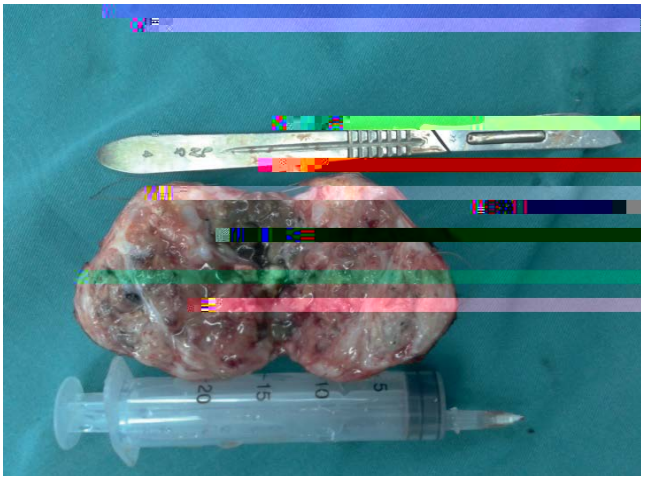
Teratomas are tumors of embryonic origin composed of tissue or organs derived from the three germinal layers including endoderm, mesoderm and neuroectoderm in varying degrees [1]. Teratoma literally means 'monstrous tumor' in Greek, a reference to the jumbled mass of di erent tissues which is common characteristic of these tumors. Teratomas have been reported to contain hairs, teeth, bone and cells like those found in various organs and glands. Intrapericardial teratoma is a rare, congenital, pedunculated clinical entity. Two-thirds of these cases occurred in infants, half of whom were less than a month old [2,33(so)12oon mic thtcc co(c)6(l0 [(t)-5(i)3(s)5(6(o)12(m)3(a i)3(s a ra in)4)6(s, t)6.o)12(n)19(t)-6(h o)7(ld [2,33(so



Tumor exposed before excision (arrow).



Cut surface of the tumor.

malignant. If frankly malignant, the tumor is a cancer for which additional cancer staging applies.

Teratomas are also classi ed by their content: a solid teratoma contains only tissues (perhaps including more complex structures); a cystic teratoma contains only pockets of uid or semi- uid such as cerebrospinal uid, sebum, or fat; a mixed teratoma contains both solid and cystic parts. Cystic teratomas usually are grade 0 and, conversely, grade 0 teratomas usually are cystic.

A “benign” grade 0 (mature) teratoma nonetheless has a risk of malignancy. Squamous cell carcinoma has been found in a mature cystic teratoma at the time of initial surgery [9]. A grade 1 immature teratoma that appears to be benign (e.g., because AFP is not elevated) has a much higher risk of malignancy, and requires adequate follow-up [10-13].

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A teratoma belongs to primary benign cardiac tumor, which account for 7% of cardiac tumors. Other primary tumors include myxomas, lipomas, broelastomas, rhabdomyoma,hamartomas etc. It is a tumor originating from di erent embryonic layers which may be either monodermal or polydermal in varying degrees which is most commonly found in children. Gonad is the most common site of teratoma. Most pericardial teratomas are benign [14] and may contain well di erentiated tissues of bones, cartilage, teeth, muscle, connective tissue, brous and lymphoid tissue, nerve, thymus, mucous and salivary glands, lung, liver and pancreas. Although intrapericardial teratomas are found rarely, it comprises about 10% of all the mediastinal tumors in children and can cause constrictive pericarditis [15]. e pericardial teratomas are usually right-sided masses, usually connected to one of the great vessels via a pedicle. Most of them lie within the pericardial sac and rarely can be intramyocardial. Intraventricular location causes arrhythmia leading to sudden death [16].

Usually intrapericardial teratomas are diagnosed during neonatal and infant stage [2,3] however in our case the Patient was 9 years old. e late diagnosis of this intrapericardial teratoma alerts us to be careful and pay more attention in routine examination of neonates and infants.

Incidental nding of such a rare tumor is worth mentioning. Most of the patients with intrapericardial teratoma have symptoms of dyspnea, chest pain and intolerant to exercise due to hemodynamic changes by compressing the chambers of the heart. As in this case, the right side of the heart was compressed severely this made the patient to be brought to the hospital. Some articles suggested of having pericardial e usion in patients with pericardial teratoma [7] which can lead to serious cardiac tamponade but rare [17,18]. In our case, there was no pericardial e usion.

Physical examination found out the suspect of a mass in the mediastinal region which by further radiological examination con rmed the tumor within the pericardium as shown in the gure1. CT is one of the best methods to see the mass and its site clearly. Other techniques are also involved in the diagnosis of such mass such as transthoracic echocardiography, MRI etc.

Histopathological examination a er the resection con rms the mass to be a mature teratoma. Histologically there were elements of the three germinal layer, the cysts being covered by a variety of epithelium that include: strati ed squamous epithelia, cubical, secretory or respiratory epithelia. e solid areas content mature or immature neuroglial, pancreatic, thyroidal, muscular, cartilaginous or bony tissue. Most of the tumor reported in neonates has been benign. Some articles have also mentioned the report of mature pericardial teratoma in adult.

Di erential diagnosis of such tumor can include other mediastinal tumors such as thymoma, lymphoma and germ cell tumors etc. Most of these tumors can cause compression of surrounding structures and even may break and leads to pericarditis, pleural e usion and pericardial e usion.

Chemotherapy and radiotherapy are not very useful in teratomas. Surgical excision is the choice of treatment. Since most of the pericardial teratomas are pedunculated and blood supplies are from the adventitia of aorta, it is easier to excise the tumor completely without much problem and fear of severe hemorrhage from the aorta. Beck was the rst to successfully resect such a tumor from a patient in 1938 [19]. Deenadayalu et al. documented the youngest patient, a two-week-old female, successfully treated through surgery [20]. e prognosis of surgically treated patients is good [21,22].

e patient promptly relieves the symptoms a er the surgical intervention. Complete excision is possibly easy in such a pedunculated teratoma and the chance of recurrence is greatly reduced.

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is case report reveals the importance of appropriate diagnosis and clinical decision making in such a rare case before intervention to avoid

from various ill e ects. Tumor should be resected as soon as detected to prevent from malignant transformation, infection, heavy compression and arrhythmias by a ecting the surrounding vital structures.

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