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Cervical thymic cyst–a case record

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Abstract
Cystic lesions of the thymus are rare. In a large series of over 200 mediastinal cysts only 12 cases of thymic cysts have been reported (Seltzer *et al.*, 1968). Cervical thymic cysts are so rare that only 35 cases have been documented in the English literature. (Al-Shihabi and Jackson, 1982).

Key words: Cysts, cervical thymic

Introduction

Pathogenesis

Thymic cysts probably arise from a developmental anomaly. They represent persistence of tubular remnants of the third pharyngeal pouch, which can occur anywhere along its line of embryological descent from the mandible to the diaphragm (Langman, 1985). Rarely the thymic cyst can develop from the fourth pharyngeal cleft (Tucker and Skolnicj, 1973). The third pharyngeal pouch gives rise to the paired primordia of the thymus gland during the sixth week of foetal life. By the ninth week of life the thymic tissue descends below the level of the clavicle to its permanent position. If the superior end of the thymic analage fails to regress in the eighth week of embryonic life a

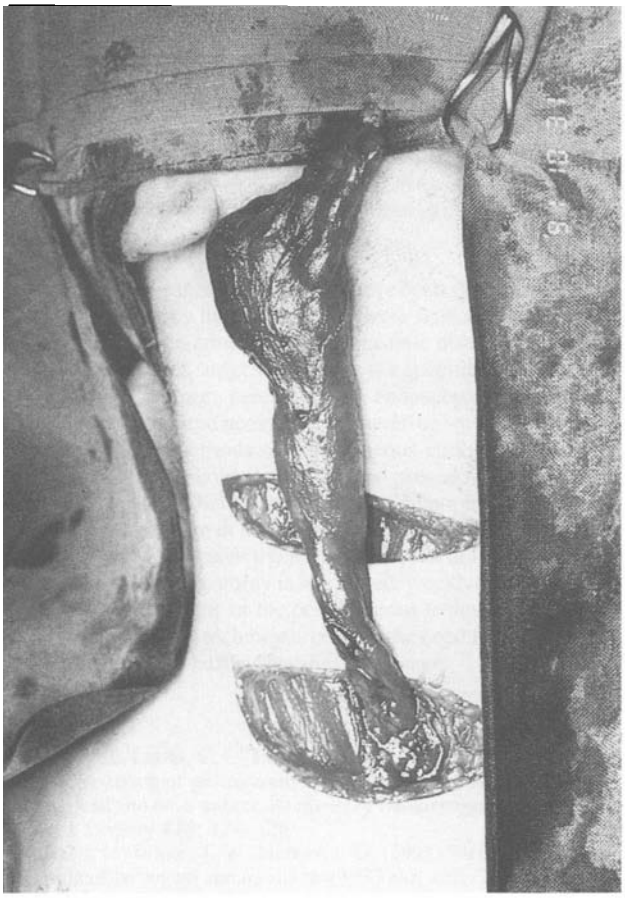

FIG. 1
Thymic cyst dissected free through two parallel skin-crease incisions.

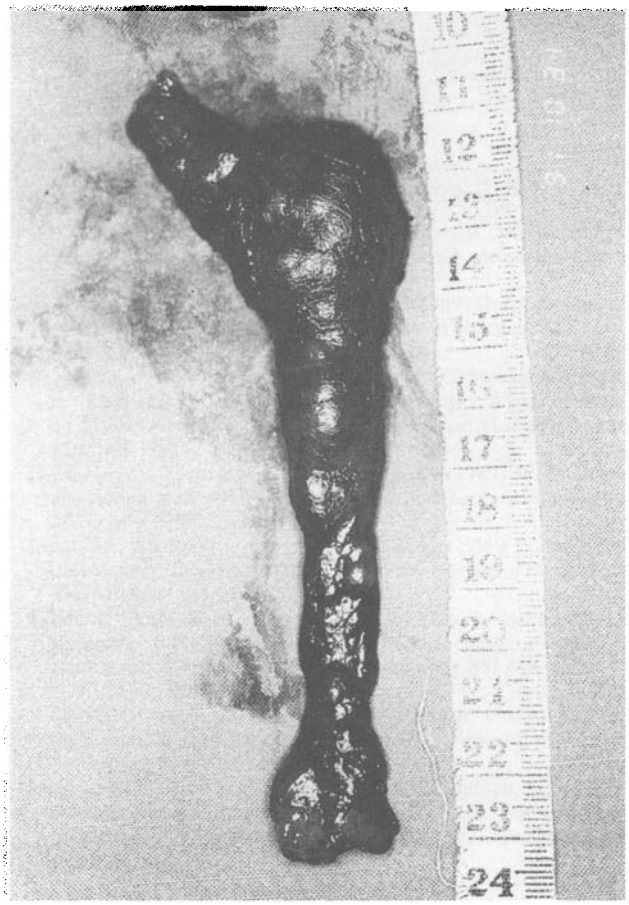

FIG. 2
Thymic cyst after removal.

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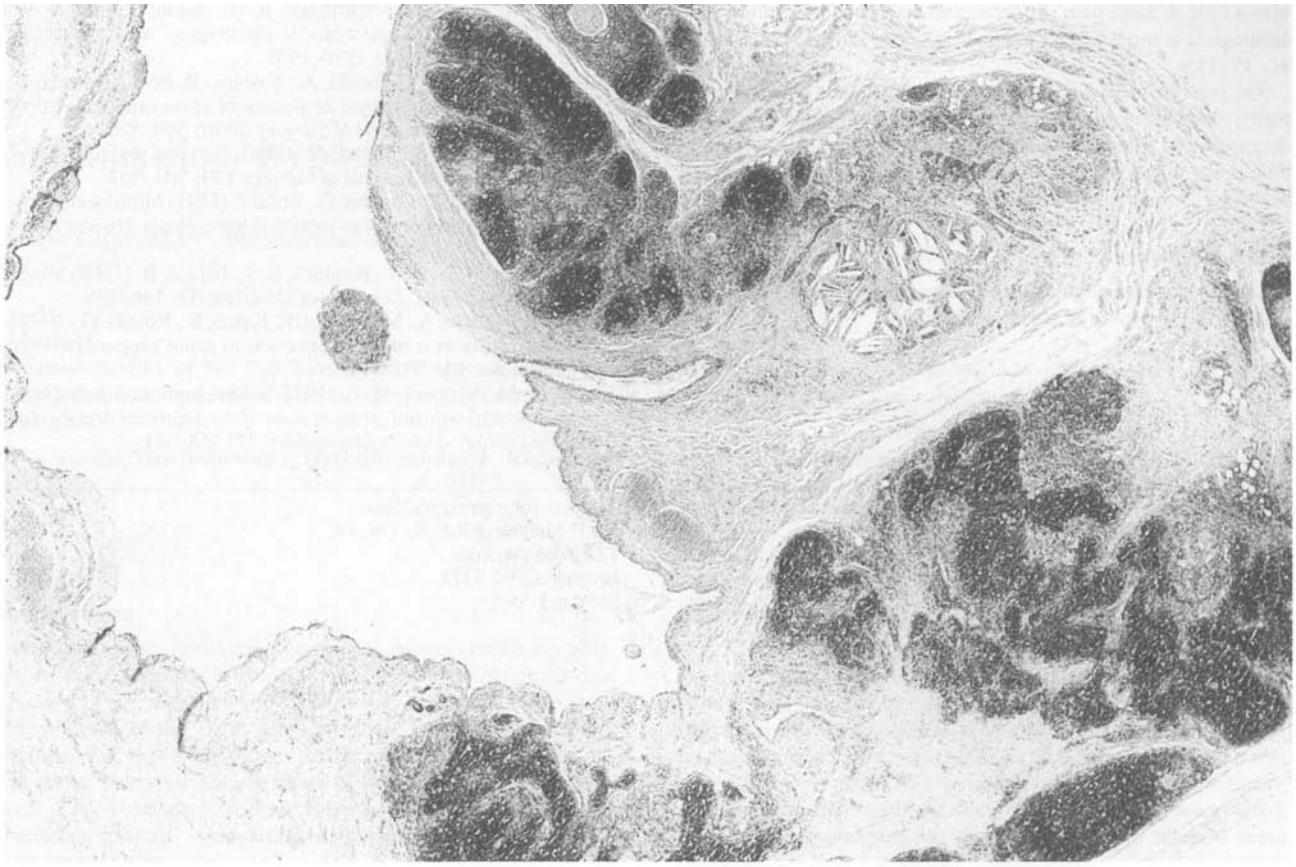

FIG. 3

Histology of thymic cyst showing abundant lymphoid tissue which contained Hassal's corpuscles with a moderately well-differentiated cortex and medulla of thymic tissue.

sequestrated solid or cystic nodule of tissue may be left along the course of migration.

The cyst contains ectodermal derivatives, e.g. epithelium and also endodermal derivatives e.g. thymic and parathyroid tissue (Reiner *et al.*, 1980). The cysts contain fluid which may be clear, amber, brown, red or gelatinous. Cholesterol crystals may be present in this fluid (Al-Shihabi and Jackson, 1982). Very rarely cysts may contain purulent material, as reported by Ozaki *et al.* (1990) and Takai *et al.* (1979).

Cervical prolongation of the thymus has been classified into seven types according to its extent into the neck. However, such classification is of little value in diagnosis or management.

Pathology

Thymic cysts may be unilocular or multilocular and vary in size, occasionally pressure necrosis may lead to the formation of granulation tissue and later fibrous tissue around the cyst (Al-Shihabi and Jackson, 1982).

Malignant degeneration of cervical thymic cysts has not been reported, but malignant changes in the heterotrophic noncystic thymus gland has been documented (Leong and Brown, 1984).

The only case of a thymic fistula was reported by Takai *et al.* (1979) when suppuration occurred following infection of a thymic cyst.

Clinical presentation

A 10-year-old boy was seen in the ENT clinic with a swelling on the right side of the neck. The swelling had appeared spontaneously a few days before and progressively increased in size. There was no history of dyspnoea or dysphagia. On examination an ill-defined diffuse mass was found extending from the angle of the mandible to the supraclavicular fossa on the right side of the neck just in front of the anterior border of the sternomastoid. There was no movement of the mass with tongue protrusion during deglutition. The mass had no air spaces when examined radiologically.

The neck was explored and the mass dissected free through two parallel skin-crease incisions over the swelling (Figure 1). The mass extended from the right parapharyngeal area (level with the pharyngeal tonsil), passing between the internal and external carotid arteries to the superior mediastinum. The lesion was clamped at the lower limit medially behind the clavicle, ligated and removed (Figure 2). Part of the lesion in the superior mediastinum was left *in situ*.

Histological examination showed abundant lymphoid tissue which contained Hassal's corpuscles with a moderately well-differentiated cortex and medulla of thymic tissue (Figure 3). A small amount of parathyroid tissue was also seen. The wall of the lesion showed fibrous tissue and mild active chronic inflammation.

The patient made an uneventful recovery and remains in good health.

Discussion

The vast majority of cervical thymic cysts present before the age of 21 years. They are classified as congential or acquired. Congenital cysts arise from the hypopharyngeal duct which is a derivative of the third pharyngeal pouch. Acquired cysts result from cystic degeneration of the thymus (Al-Shihabi and Jackson, 1982; Suster *et al.*, 1990).

Thymic cysts are usually asymptomatic (90 per cent). A few cases may present with dyspnoea, hoarseness or dysphagia (Al-Shihabi and Jackson, 1982). Only when there is haemorrhage

into a cyst is there pain. Spontaneous haemorrhage can occur, although it is more often seen with blood dyscrasia (Missier *et al.*, 1971).

The pre-operative differential diagnoses include lymphadenopathy, branchial cyst and cystic hygroma. The pre-operative diagnosis of an asymptomatic thymic cyst is difficult and, though the diagnosis is suspected, at operation confirmation by histology is required (Behring and Behring, 1963).

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