Case Report

STERNAL BRONCHOGENIC CYST: A RARE CONDITION.

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ABSTRACT

Bronchogenic cyst is a congenital developmental abnormality of the embryonic foregut usually formed as a result of an accessory lung bud becoming isolated from the rest of the tracheobroncheal tree. Usually a solitary extra pulmonary cyst, it's a benign condition, found most commonly in the mediastinum with rare occurrence on the skin or subcutaneous tissues.We report a case of cutaneous bronchogenic cyst that occurred in the skin over the manubrium sterni of four years old boy. The diagnosis was made by the histopathological findings which revealed ciliated & mucin-producing pseudo stratified columnar epithelium of respiratory type.

KEY WORD: Bronchogenic Cyst.

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INTRODUCTION

Endodermal cysts are presumed to be derived from the endoderm of the developing gastrointestinal tract or, in rare cases, the respiratory system. If the Endodermal cyst is predominantly lined with respiratory epithelium it is termed as a bronchogenic cyst.

Bronchogenic cysts are generally found in the mediastinum particularly posterior to the carina but they rarely occur in such unusual sites at the skin, subcutaneous tissue, pericardium and even the retroperitoneum.Since the first report of subcutaneous bronchogenic cyst by Seybold & Clagett in 1945, only 16 cases of sub diaphragmatic bronchogenic cyst have been reported in English literature[1] while only 65 cases of cutaneous bronchogenic cyst has been reported in the literature.[2]

Rarity of the condition prompted us to report a case of cutaneous bronchogenic cyst along with review of literature that occurred in the skin over the manubrium sterni of four years old boy which was completely excised under general anesthesia. The diagnosis was made by the histopathological findings.

CASE REPORT

Four years old boy presented to us in surgical clinic with history of 02x1.5cm swelling just over the manubrium sterni since birth. The swelling was cystic in consistency, mobile with overlying skin not adherent to the lesion. It was non tender. There was neither any punctum nor there were any signs of inflammation. The lump was completely excised under general anesthesia with uneventful recovery. The histopathological examination revealed a fibrocollagenous tissue with a cyst wall lined mainly by pseudo stratified ciliated columnar epithelium and partly by stratified squamous epithelium. Mucus glands were also present in the wall with no lymphoid tissue seen. All these features were concordant with Bronchogenic cyst.

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DISCUSSION

Cutaneous bronchogenic cysts are cystic masses that are found shortly after birth or in early child hood and are rare with a prevalence range from 1:42000 to 1:68000.[3] They usually present as an asymptomatic subcutaneous nodules, a draining sinus or as a pedunculated growth. Some of them have a fistulous opening that drains mucoid material.[4] It is four times more common among male population than females. The most common location of cutaneous bronchogenic cyst is the suprasternal notch, followed by the presternal area, neck and scapula.[5] Unusual sites of occurrence have been described in the chin, shoulder, anterior to the right lobe of thyroid and on the anterior abdominal wall. There has been reported cases of communication with deeper structures like first rib and mediastinum.[6] Connection of cystic mass to sub-arachnoid space at sacral region has also been reported.[7]

The origin of bronchogenic cysts can be readily explained by there embryologic development. The laryngotracheal groove separates the primitive foregut into dorsal and ventral structures beginning in the fifth week of gestation. In the seventh week of gestation this separation is completed with a dorsal component forming the lung buds and a ventral component forming the foregut.[8] Most bronchogenic cysts are formed during this period from the developing lung bud. Anterior migration of an intra thoracic bronchogenic cyst or pinching off of the fusing sternal bars on the developing lung parenchyma explains the etiology of cutaneous bronchogenic cyst on anterior chest wall, as seems to have happened in the present case, while migration of these sequestered structures in the developing embryo explains the development of extra thoracic cysts located in unusual sites like neck, shouder and chin. Transplantation following a trauma via lymphatic or hematogenous spread and metaplasia of cutaneous adenexa has also been hypothesized as possible causes.

Characteristically these cysts are lined by ciliated pseudo stratified columnar epithelial cells interspersed with goblet cells, typical respiratory epithelium. They often contain smooth muscle fibers, cartilages or mucus glands. Lymphoid aggregates may be found in cutaneous bronchogenic cysts.[9] In our case it had a typical respiratory epithelium without lymphoid aggregates.

The differential diagnosis of a dermal cyst lined by ciliated pseudo stratified columnar epithelium of respiratory type includes branchial cleft cyst, thyroglossal duct cyst, mature cystic teratoma and cutaneous ciliated cyst . Excision is recommended for the treatment of cutaneous bronchogenic cyst and to establish the diagnosis .Mucoepidermoid carcinoma has been reported to arise from bronchogenic cyst, hence excision also avoids malignant transformation.[10]

CONCLUSION

In conclusion bronchogenic cysts are uncommon congenital malformations and should be included in the differential diagnosis of congenital cystic and nodular skin lesions on the upper chest, upper back and neck.

REFERENCES

1. Yang SW, Linton JA, Ryu SJ, Shin DH, Park CS. Retroperitoneal multilocular bronchogenic cyst adjacent to adrenal gland. Yonsei Med J 1999;Vol 40(5):523-526.
2. Carden C, Dykes E, Pollock AM. An unusual midline swelling-a case report of a cutaneous bronchogenic cyst. Eur J Pediatr Surg 2008;(18):345-346.
3. Kundal AK, Zargar NU, Krishna A. Scapular Bronchogenic Cyst. J Indian Assoc Pediatr Surg 2008;13:147-8.
4. Muramatsu T, Shirai T, Sakamoto K.Cutaneous bronchogenic cyst. Int J Dermatol 1990;29(2):143-4.
5. Zvulunov A, Amichai B, Grunwald MH, Avinoach I, Halevy S. Cutaneous bronchogenic cyst delineation of a poorly recognized lesion. Pediatr Dermatol 1998;15:277-81.
6. Gessendorfer H. Cervical branchial cyst. J Pediatric Surgery 1973; 8:435.
7. Kwang-Seok K, Sin-Soo Jeun, Youn-Soo Lee, Chun-Kun Park. Sacral Intraspinal Bronchogenic Cyst; A Case Report. J Korean Med Sci 2008; 23(5):895-897.
8. Desforges G. Primitive foregut cysts. Ann Thorac Surg 1967;4:574-7.
9. Beyer LG, English JC, Halbach DP. Presternal bronchogenic sinus with pedunculated lymphoid aggregates. Am J Dermatol 2000;22:79-82.
10. Tanaka M, Shimokawa R Matsubara O. Mucoepidermoid carcinoma of the thymic region. Acta Pathol Jpn 1982;32:703-12.