

Second Branchial Cleft Cyst: A Case Report

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ABSTRACT

Objective: Branchial anomalies are congenital pathologies that are seen in the lateral region of the neck and are generally benign. The branchial clefts develop in the 2nd-7th weeks of fetal life as embryonal development. The branchial anomalies are caused by non-disappearance, abnormal development and, incomplete emerger of the branchial clefts and pockets during embryonal development. The branchial anomalies are generally seen as the cyst. The most common cyst was the second branchial cleft cyst with 95%. Their diameter is usually a few centimeters.

Case: A 37-year old male patient was admitted to the hospital because of a swelling on the left side of his neck for four years. Physical examination revealed a mobile cystic mass in level 2 at the upper left jugular region of the neck. The cystic mass and the surrounding lymph nodes were excised and sent to the pathology laboratory. A cystic mass, approximately 5x4x3.5 cm in size, containing cystic areas was observed macroscopically. Microscopically, the cyst was lined with squamous epithelium and contained large lymphocyte groups in the subepithelial area. The case was reported as the branchial cleft cyst.

Conclusion: Branchial cleft cysts should be excised before reaching large sizes, as they may cause pain and pressure on the surrounding tissue. In addition, it should be kept in mind that malignancy may develop from branchial cleft cysts, although rare.

Keywords: Branchial, cleft, cyst

INTRODUCTION

Branchial anomalies are congenital pathologies that are usually benign and seen in the lateral neck region (1,2). Branchial anomalies are generally seen as cysts, sinuses, and fistulas (1,2). These anomalies originate from the branchial cleft (3). Of these cysts, malignancy may rarely develop, the most common being squamous cell carcinoma (2,4). Branchial clefts begin to form in the second week of embryonic life and close between the 6th and 7th weeks (5). Branchial anomalies are caused by the destruction, abnormal development, and incomplete fusion of branchial clefts and pockets during embryonic development (1,3). A human has five branchial clefts, five branchial sacs, and six branchial arches on either side of the neck (6). The most common is the 2nd branchial cleft cyst with 95% (1). First branchial cleft cysts are usually located in the preauricular region (7). Second branchial cleft anomalies are localized anterior to the sternocleidomastoid muscle (7). Third and fourth branchial cleft cysts develop from the piriform fossa and end in the paratracheal region of the neck (8). Treatment of branchial cleft cysts involves total excision of the lesion (9).

CASE REPORT

A 37-year-old male patient was admitted to the hospital with the complaint of swelling on the left side of the neck for four years. On physical examination, a mobile cystic mass of approximately 5 cm was found in the upper jugular area of the neck at level 2. There were mild redness and pain in the area of the mass. Surrounding the mass, there were three lymph node-like lesions. No pathological finding was detected in the examination of the patient's mouth, oropharynx, and larynx.

Case Report

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A minimal increase in C-reactive protein and sedimentation was observed in laboratory examinations. No pathology was found in the chest x-ray. The cystic mass and surrounding lymph nodes were excised and sent to the pathology laboratory.

Macroscopically, the lesion was 5x4x3.5 cm in size and contained cystic areas (Figure 1).



Figure 1: Approximately 5 cm cystic lesion, macroscopic view.

The thickness of the cyst was 0.1-0.7 cm. There was light brown necrotic material in the cyst. 4- micron sections were taken from the paraffin blocks prepared from the tissues belonging to the lesion. The samples were examined by staining Hematoxylin-Eosin.

In histopathological examination, the cyst was lined with squamous epithelium and there were lymphocyte groups of different sizes in the subepithelial area (Figure 2).

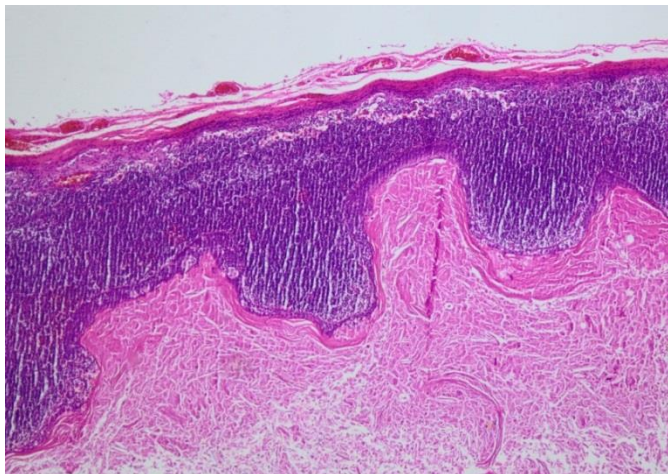


Figure 2: Cystic lesion lined by squamous epithelium, containing lymphocyte groups of different sizes in the subepithelial area (HEx40).

The contents of the cyst consisted of eosinophilic necrotic material. The case was reported as the branchial cleft cyst. Three lymph node-like lesions were reported as active chronic lymphadenitis.

DISCUSSION

Branchial anomalies are the most common congenital neck pathologies in the lateral neck (4). Branchial cleft cysts are usually seen as cystic masses on the left lateral side of the neck (1,2). These cysts can be found at any age, but findings generally occur in young adults between the ages of 20-40 (2,4). It usually occurs unilaterally with no significant sex predilection (10). These cysts are often seen as neck masses following respiratory tract infection attacks (2,4). Infection may develop in cases of branchial cysts. Of these cysts, malignancy may rarely develop, the most common being squamous cell carcinoma (2,4).

In addition to physical examination, ultrasonography, computed tomography, and magnetic resonance imaging methods are used for diagnosis (11). Fine needle aspiration biopsy and observation of cholesterol crystals, epithelial cysts and squamous cells in the material taken may be helpful in diagnosis (12). The definitive diagnosis of branchial cysts and carcinomas is made by the removal of the lesion and then the histopathological examination of the mass (13,14).

Second branchial cleft cysts range in size from 1 to 10 cm (15). Alimoglu Y et al. Found the mean diameter of second branchial cleft cysts to be 3.29 in their study (16). In our case, the large diameter of the lesion was 5 cm.

CONCLUSION

Removal of these lesions at an earlier stage will increase the quality of life of the patient. In addition, since they are rarely malignant, more successful results will be obtained with early diagnosis and treatment.

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