Second Branchial Cleft Cyst Mimicking Large Cervical Lymphadenopathy: Differential Diagnosis

Büyük Servikal Dev Lenfadenopatiyi Taklit Eden İkinci Brankial Yarık Kisti

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ABSTRACT Neck masses are common in children. Enlarged, palpable lymph nodes are common due to the reactive hyperplasia of lymphatic tissue and are mostly due to local inflammatory process. Differential diagnosis of persistent nodular changes in the neck in children are different than adults. Because, congenital abnormalities and infectious diseases are more frequent than malignancies in this age group. We have described second branchial cleft cyst in a 14-year-old boy emphasizing the diagnostic difficulties of this type of lesions and the clinical aspects as well as the details of surgical treatment. Branchial cyst should be remembered in the differential diagnosis of any lateral neck swelling, regardless of whether the swelling is solid or cystic, painful or painless, especially when it occurs in the first three decades of life.

Key Words: Head and neck neoplasms; neck; lymphatic diseases

ÖZET Klinik uygulamalar sırasında çocuklarda boyun kitlelerine sık rastlanır. Lokal inflamatuar yanıt sonucu lenfatik dokuların reaktif hiperplazisi ile oluşan büyümüş ve palpabl lenf nodları yaygındır. Doğuştan anomalilerin ve enfeksiyöz hastalıkların sık ve malignitelerin daha az olması nedeniyle çocuklarda sebat eden boyun noduler değişikliklerin ayırıcı tanısı erişkinden farklıdır. 14 yaşındaki erkek çocukta görülen ikinci brankial yarık kistini klinik yönleri ile cerrahi tedavisi ile birlikte bu lezyonların ayrıcı tanısındaki zorlukları vurgulayarak tarifledik. Brankial kist, hayatın ilk üç dekadındaki tek taraflı boyun şişkinliğinin ayırıcı tanısında kitlenin solid veya kistik, ağrılı veya ağrısız olup olmadığından bağımsız olarak akılda tutulmalıdır.

Anahtar Kelimeler: Baş ve boyun tümörleri; boyun; lenfatik hastalıklar

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Neck masses are frequent in children. These lesions can present as palpable cystic or solid masses, infected masses, draining sinuses, or fistulae.[1] Differential diagnosis includes a variety of diseases that can cause cervical lumps such as congenital, infectious and neoplastic neck masses. We have described a case with a second branchial cleft cyst in a 14-year-old boy by emphasizing the diagnostic difficulties of this type of lesions and the clinical aspects as well as the details of surgical treatment.

CASE REPORT

A 14-year-old boy presented to our clinic with a large asymptomatic diffuse swelling on the right lateral neck. The swelling was present for several months but attained large dimensions during the previous three months.

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Clinical examination revealed a hard, painless mass of 5 x 5 cm. It was not either immobile or freely mobile and extend from the right angle of the mandible to the lateral neck region under the sternocleidomastoid muscle. The patient was not febrile, and there was no restriction of neck movements. The overlying skin was intact, without signs of erythema or indurations. No additional masses were palpated. There was no evidence for cervical adenopathy. There was no palpable lymphadenopathy laterally or contralaterally to the lesion. Tonsils were present and the patient reported a transient attack of tonsillitis almost three months ago. Routine hematologic and biochemical examinations, including thyroid hormonal measurement were done, and they were in normal limits. An ultrasonographic examination showed a well-defined hypoechoic solid lesion of more than 6 cm in diameter with septations. In some parts of the lesion, fine scattered echoes could be identified. The larynx, nasopharynx, and thyroid glands showed no abnormalities. No cranial nerve dysfunction was noted. Because of history of a previous tonsillitis and because of solid nature of the mass as detected by ultrasonography, the lesion was considered as lymphadenopathy.

The patient was operated through an upper cervical incision over the mass under general anesthesia. The mass had a cystic character and it was totally removed without damaging the surrounding main structures. Patient's recovery was significant and he was discharged the following day. Histology revealed the cyst to be lined by ciliated pseudostratified columnar epithelium. Fibrous tissue, occasional microscopic focis of smooth muscle and patchy chronic inflammation were observed within the wall (Figure 1, 2). These results confirmed the diagnosis of second branchial cleft cyst histologically and anatomically. Postoperative course was uneventful and without any recurrence.

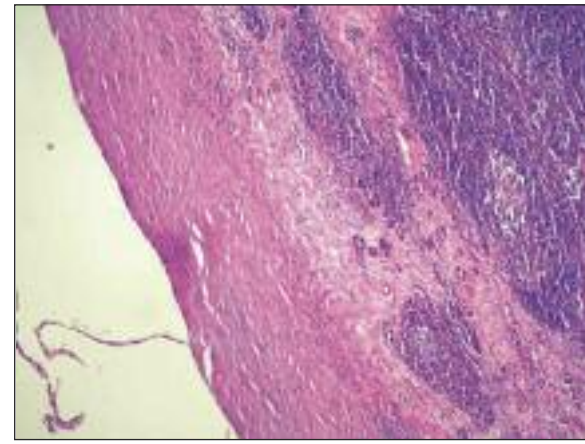

FIGURE 1: Fibrotic cyst wall that contains lymphoid tissue with active germinal centers (Hematoxylin and eosin, x150).

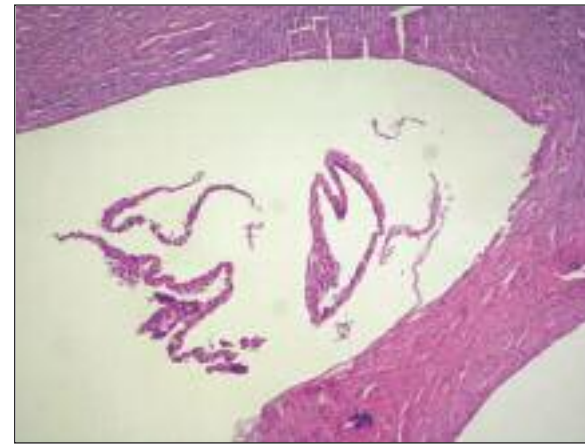

FIGURE 2: Cyst wall is fibrotic and pseudostratified epitelhium spills into the cyst lumen (Hematoxylin and eosin, x150).

DISCUSSION

Enlarged, palpable lymph nodes are common due to the reactive hyperplasia of lymphatic tissue mainly due to local inflammatory process. Park stated that up to 90% of children aged 4-8 years have palpable cervical lymph nodes.[2] Differential diagnosis of persistent nodular changes on the neck are different in children. Because, congenital abnormalities and infectious diseases are more frequent than malignancies in this age group. Abscesses and necrotic adenopathy can also be difficult to distinguish from a branchial cleft cyst, particularly if the cyst has previously been infected.[3]

The second branchial anomalies account for approximately 90% of all branchial anomalies. They are usually located on the lateral side of the neck, directly anterior to the inferior one third of the sternocleidomastoid muscle.[1]

The second branchial fistula courses upward along the carotid sheath, between the external and internal carotid arteries, in front of the hypoglossal nerve and ends in the tonsillar fossa.[1]

Usually branchial sinuses and fistulas are encountered in younger ages, while cysts are observed in adolescent or adults. Majority of second branchial anomalies are seen by the age of 5 years. Most of them manifest themselves by an intermittent mucous or purulent discharge during the newborn period.[1]

There is no imaging method capable of identifying a branchial cleft anomaly with certainty. Many believe that the diagnosis of branchial cysts is easy and the diagnostic accuracy is high. Poor diagnostic accuracy (52%) was reported before. Difficulties in the diagnosis of branchial cyst have also been emphasized by Ingoldby.[4] Only 11 of 23 cysts (47.8%) in his series were diagnosed correctly. Differential diagnosis should also include lymphadenitis, tuberculous adenitis, abscess, lipoma, cystic hygroma, hemangioma, lymphoma and parotid neoplasms.[5] Second branchial cleft anomalies are the most common congenital masses of the lateral neck. Abscesses and necrotic adenopathy also can be difficult to distinguish from a branchial cyst, particularly if it has previously been infected.[6] So, it may be misdiagnosed as in our patient.

Ultrasonography is a very reliable method for the evaluation of soft tissues masses of the neck. The cystic or solid nature of a lesion can be easily clarified and therefore ultrasonography could be the first examination when a branchial is suspected.[7]

In order to confirm the diagnosis, Agaton-Bonilla and Gay-Escoda obtained CT scans in 44% and MRI in 13% of patients.[8] Accurate diagnosis could not be reached with ultrasonography in our patient. Most investigators agree that CT and MRI are very useful in demonstrating the cystic nature and the anatomical extensions of branchial anomalies.[1]

The treatment of choice for branchial cyst is complete surgical excision. Improper surgical treatment will result in definite recurrence. Complete excision of branchial cysts after previous improper surgical procedures will result in a high recurrence rate of 20%, while complete excision without previous surgery will result in a low recurrence rate of 3-4%.[1]

Failure to diagnose branchial cyst will result in delay in treatment. Misdiagnosis and improper operations can cause prolonged hospital stay and an increase of complications such as nerve and venous injury. Branchial cyst should be remembered in the differential diagnosis of any lateral neck swelling, regardless of whether the swelling is solid or cystic, painful or painless, especially when it occurs in the first three decades of life.

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