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Fine Needle Aspiration Cytology of Fibromatosis Colli

Fibromatozis Kolli'de İnce İğne Aspirasyon Sitolojisi

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ABSTRACT

Fibromatosis colli, also known as sternomastoid tumor, is considered a rare benign lesion of infancy of uncertain etiology and pathogenesis. Usually a self-limiting condition, diagnosis of this lesion by less invasive techniques is important to avoid an unnecessary surgical procedure. We report a case of a one-month-old male infant who presented with a firm 3 cm swelling on the left side of the neck. Fine needle aspiration was performed and the cytological features were suggestive of fibromatosis colli. Fibromatosis colli has to be differentiated from various congenital, inflammatory and neoplastic conditions that can occur in a similar location. Fine needle aspiration cytology appears to be a cheap, rapid, less invasive and fairly accurate diagnostic aid for excluding other causes and detection of this type of lesion. Identification of these lesions is important as they are usually self-eliminating with some cases requiring conservative management and rarely surgical intervention.

Key Words: Fibromatosis colli, Fine needle aspiration, Cytology

ÖZ

Sternomastoid tümör olarak da bilinen fibromatozis kolli, çocukluk çağının etiyolojisi ve patogenezi bilinmeyen, nadir görülen benign bir lezyonudur. Gereksiz bir cerrahi müdahaleden kaçınmak için kendi kendini sınırlayan bir durum olan bu lezyonun tanısının daha az invazif yöntemler ile konması önemlidir. Boynun sol tarafında 3 cm'lik sert kıvamlı bir şişlik ile başvuran 1 yaşında erkek çocuk olgusunu sunuyoruz. İnce iğne aspirasyonu uygulanmış ve sitolojik bulgular fibromatozis kolli'yi desteklemiştir. Fibromatozis kolli, aynı lokalizasyonda görülen çeşitli konjenital, inflamatuvar ve neoplastik durumlardan ayrılmalıdır. İnce iğne aspirasyon sitolojisi, bu tip bir lezyonun saptanması ve diğer nedenlerin ekarte edilmesi için ucuz, hızlı ve oldukça yeterli görünmektedir. Nadiren cerrahi müdahale gerektiren ve konservatif tedavi ile genellikle bazıları kendiliğinden kaybolan bu lezyonların tanınması önemlidir.

Anahtar Sözcükler: Fibromatozis kolli, İnce iğne aspirasyonu, Sitoloji

INTRODUCTION

Fibromatosis colli or sternomastoid tumor is a rare benign type of fibromatosis occurring in infants, many of them presenting with congenital torticollis. Usually appearing within the first two months of life, the tumor is of uncertain pathogenesis but is of benign nature. Usually these lesions require no surgical intervention as such, unless there is need for correction of torticollis. A history of perinatal trauma is often sited as a possible cause of this tumor (1). A fusiform swelling is usually noted in the sternomastoid region in an infant which causes a diagnostic dilemma to the clinician. Fine needle aspiration cytology (FNAC) provides a rapid, cheap, less invasive diagnosis and helps to exclude other causes of neck swelling in an infant such as lymphadenopathy, various benign and malignant tumors as well as congenital cysts and thus avoids unnecessary invasive surgical intervention.

CASE REPORT

A one-month-old male infant presented to the outpatient clinic with a round, firm swelling 3 cm in diameter, in the left anterior triangle of neck just anterior to the left sternocleidomastoid muscle. The overlying skin was normal. The mother had noticed the swelling one to two weeks after birth. The child had been delivered with the help of forceps due to breech presentation. Ultrasonography revealed a fusiform enlargement of sternocleidomastoid muscle with heterogenous echotexture. No lymphadenopathy, calcification or cystic changes were noted.

FNAC was done with a 23-gauge needle fitted to a 10 ml syringe. The aspirate was stained with Hematoxylin and Eosin (H& E) and May-Grunwald-Giemsa (MGG) stains.

Microscopy revealed the presence of plump as well as normal fibroblasts along with atrophic muscle cells (Figure 1). A characteristic finding was the presence of multinucleated

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regenerating muscle cells. The background was hemorrhagic with no evidence of necrosis or inflammation (Figure 2A,B). A diagnosis of sternomastoid tumor of infancy or fibromatosis colli was made.

DISCUSSION

Fibromatosis colli (FC) or sternomastoid tumor of infancy consists of benign proliferation of fibroblasts along with atrophic and regenerating muscle cells occurring in neonates, being more frequent in males (2). The pathophysiology is not clear, but is felt to be related to prenatal and antenatal events and particularly a birth injury associated with difficult or assisted deliveries, including forceps deliveries (2,3). Birth injury resulting in ischemia may be a likely cause but the growth can be a cause rather than effect of abnormal labor[1]. The present case also had a forceps-assisted delivery for breech presentation and presented with a left-sided neck mass. Fibromatosis colli may be associated with other congenital defects like club foot, congenital dislocation of hip etc. However, no other congenital birth defect was detected in our case. FNAC provides an economical, rapid and less-invasive procedure for diagnosis and to exclude other causes of neonatal neck swellings such as abscess, lymphadenitis, hematoma, congenital lesions like cystic hygroma, branchial cleft cyst, thyroglossal duct cyst, hemangiomas, teratomas, dermoid cysts or neoplastic lesions like lipomas, rhabdomyosarcoma, fibrosarcoma, neuroblastoma and lymphoma (3).

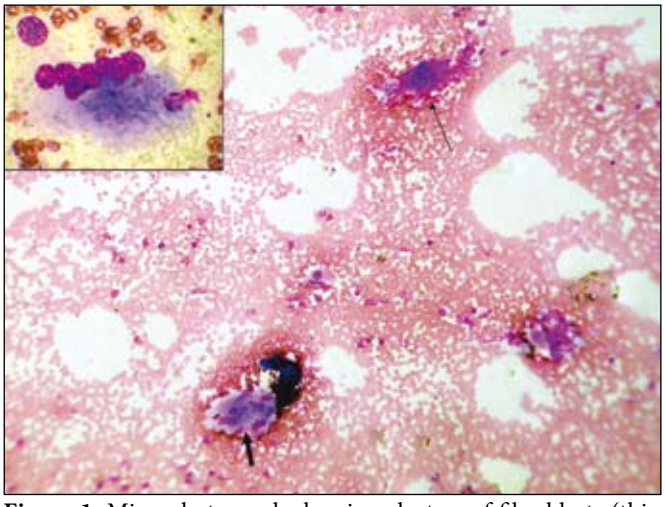

Figure 1: Microphotograph showing clusters of fibroblasts (thin arrow) and regenerating muscle fibers (thick arrow). Few isolated fibrocytes seen scattered in the hemorrhagic background (MGG; x200). Inset showing regenerating muscle fiber (MGG; x1000 imm. oil).

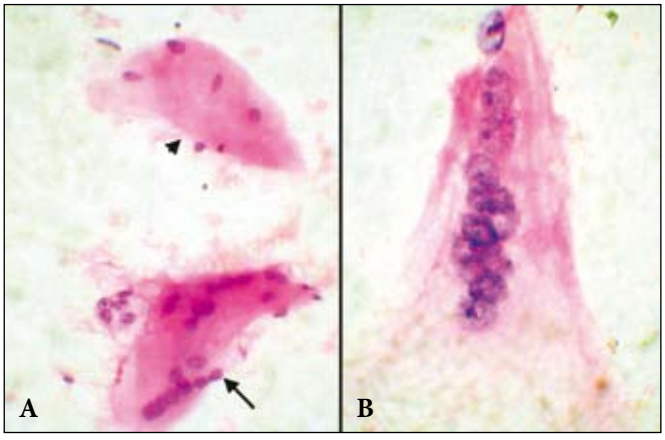

Figure 2: (A) Microphotograph showing atrophic muscle fiber (arrow head) and regenerating muscle fiber (arrow) (H&E, x400) **(B)** Microphotograph showing regenerating muscle fiber (H&E, x1000 imm. oil).

Other forms of infantile fibromatosis are differentiated from fibromatosis colli on the basis of various clinical and cytological features like collagen fragments and spindly nuclei (4). Nodular fasciitis is differentiated by pleomorphism of proliferating fibroblasts and myofibroblasts with ovoid or kidney-shaped nuclei, often binucleated and multinucleated cells with myxoid background and few inflammatory cells (5).

Kurtycz et al. (2) reported the cytological features of ten cases while Zaharopoulos et al. (6) described seven cases of fibromatosis colli. FNAC provides a diagnosis of this disease with considerable ease and recognition of this entity is important as newer nonsurgical treatment procedures result in regression of 90% cases of fibromatosis colli (7) thus avoiding unnecessary surgical intervention.

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