Cytologic Features of Fibromatosis Colli of Infancy

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OBJECTIVE: To present the characteristic cytologic features of fibromatosis colli in infancy.

STUDY DESIGN: A series of 14 children with the typical clinical presentation of fibromatosis colli of infancy on whom fine needle aspiration had been performed.

RESULTS: The cytologic features were identical in all cases. All samples contained degenerated muscle cells in varying numbers, including multinucleated cells with abundant cytoplasm. Fibroblasts appeared mainly as single cells but with admixed clusters of varying sizes. The cells were slender, spindle shaped or somewhat rounded, with benign nuclear characteristics.

CONCLUSION: In the typical clinical setting and with the cytologic findings described in our series, surgical biopsy may be avoided. (Acta Cytol 1997;41:633–635)

Keywords: aspiration biopsy, fibromatosis.
Papanicolaou-stained, alcohol-fixed specimens were available in six cases.

Clinical History
There were 11 males and three females with an age range from 2 weeks to 9 months. All presented with a tumor 1–2 cm in diameter in the sternocleidomastoid muscle. Nine had a history of birth trauma; the remaining five had had uneventful deliveries. Twelve patients were reexamined at the age of 6 months to 3 years, while two were lost to follow-up. In one child the tumor was unchanged. In the rest a spontaneous mass reduction was observed.

Cytologic Findings
Cellularity was moderate except for one case, which showed scanty cell material. All samples contained degenerated muscle cells in varying numbers, including multinucleated cells with abundant cytoplasm (Figure 1). There was no inflammatory cell component. Mitoses were not seen. Eosinophilic background material was apparent in Giemsa-stained smears but not in Diff-Quik- or Papanicolaou-stained smears. Fibroblasts appeared mainly as single cells but with admixed clusters of varying sizes (Figure 2). The cells were slender, spindle shaped or somewhat rounded. Nuclear chromatin was finely granulated and evenly distributed. There were 0–2 round small or medium-sized nucleoli (Figure 3). Cytoplasm was moderate in amount, light blue with Giemsa- and Diff-Quik–stained smears and light gray with Papanicolaou stain.

Discussion
Fibromatosis colli of infancy has a characteristic clinical setting as to age, sex, birth trauma, location and size of the tumor. Our patients fit all these criteria. A history of complicated delivery was present in 60% of cases; that number was somewhat higher than in the literature. The cytologic features were identical in all cases, with a benign, proliferative fibroblastic process and degenerated muscle fibers, consistent with damage to muscle tissue. The findings accurately reflect the known histologic picture of this lesion as well as earlier cytologic reports. The cytologic differential diagnoses include all
types of benign fibrous proliferations of infancy.

Reports on such lesions are few in the cytologic literature.3 These entities may not be separable on purely cytologic characteristics but typically occur at locations other than the sternocleidomastoid muscle and usually at an older age. Fibromatoses lesions of adulthood have been described as having a similar cytologic appearance as in infancy.2,4,6

Congenital/infantile fibrosarcoma is a low grade malignancy. This is a rare tumor that may appear at birth, and approximately 50% of cases present during the first three months of life.1 The principal sites are the extremities; the head and neck are less commonly involved. Also, the lesion is often much larger (size range, 1–20 cm). The cytologic features have not been described before to our knowledge.

It is our opinion that in the typical clinical setting and with the cytologic findings described in our series, surgical biopsy may be avoided. The patients should then be followed clinically.

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References