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Nodular Fasciitis: An Uncommon Pediatric Parotid Region Mass

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Authors' contributions

This work was carried out in collaboration between both authors. Author JH wrote the initial draft of the manuscript. Author PK wrote the final draft. Authors JH and PK managed the literature search. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aim: To describe a pediatric patient with an uncommon parotid region mass that was felt on ultrasound and clinical examination to be intraparotid.
Case Presentation: A16-year-old female presented with a viral illness and tender left infra-auricular mass, thought to be a reactive lymph node. There was no history of trauma. The mass gradually increased in size. Physical examination revealed a 2 cm mass thought to be arising from the parotid gland. Ultrasound described a mass suspicious for an intraparotid malignancy with biopsy recommended. MRI revealed the mass to be superficial to the left parotid gland. FNA was not performed prior to surgery. Superficial parotidectomy was performed revealing a benign spindle cell tumor. Immunoperoxidase studies were performed on the specimen. The immunophenotype supports the final diagnosis of nodular fasciitis.
Discussion and Conclusion: The differential diagnosis for pediatric parotid region masses is broad and includes both benign and malignant etiologies, many of which have nonspecific imaging findings. These may include schwannoma, reactive lymph node, lymphoma, pleomorphic adenoma, adenoid cystic, acinic cell and adenocarcinoma and sarcoma. Among benign masses to be considered, nodular fasciitis should be included in the differential diagnosis, especially in the context of a new rapidly growing mass and history of recent trauma. In these particular

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circumstances, FNA can be considered prior to biopsy or excision, sparing the potential morbidity that may be associated with invasive procedures. If FNA yields a definitive diagnosis, nodular fasciitis typically has a benign self-limited course and may completely resolve over time obviating the need for major intervention.

Keywords: Pediatric; parotid; nodular; fasciitis.

1. INTRODUCTION

Nodular fasciitis is a fibroblastic lesion involving subcutaneous tissue. It is uncommon in the pediatric population. The parotid region is considered an uncommon location. Although excision is considered the definitive treatment, spontaneous resolution is common. FNA is highly accurate for definitive diagnosis and should be considered prior to excision because nodular fasciitis has a benign self-limited course and may completely resolve, thus sparing the patient the potential morbidity associated with surgical excision. We report the case of a16 year old girl diagnosed with a parotid regionmass treated with surgical resection.

2. PRESENTATION OF CASE

A 16-year-old female presented to her primary care physician with a viral illness and a mildly tender left infra-auricular mass which was presumed to be a reactive lymph node at that time. The illness resolved, but the mass gradually increased in size over the next 4 months at which time she was referred to an otolaryngologist.

The otolaryngologist described a 2 cm firm slightly mobile lesion thought to be arising from the parotid gland. Further evaluation of the mass was performed with ultrasound (Fig. 1) which revealed a 2.3 cm x 1.5 cm x 1.6 cm hypoechoic oval mass within the parotid gland. The mass demonstrated central color flow and was thought to be suspicious for malignancy prompting a recommendation to proceed to biopsy. MRI was performed pre and post contrast (Fig. 2) revealing a well circumscribed heterogeneously enhancing 2 cm x 3 cm mass in the left infra-auricular region, superficial to the left parotid gland with several prominent cervical lymph nodes. Inflamed first branchial cleft cyst was suspected.

A left superficial parotidectomy was performed revealing a benign spindle cell tumor and a final diagnosis of nodular fasciitis.

3. DISCUSSION

Nodular fasciitis is a rapidly growing pseudosarcomatous fibroblastic lesion involving the subcutaneous tissue. It is one of the most common benign mesenchymal lesions histopathologically misdiagnosed as sarcoma. Nodular fasciitis is thought to arise following local trauma and may be associated with a genetic predisposition [1]. There is no gender predilection and lesions are most common in individuals between the ages of 20 and 40 years with children comprising only 10% of total cases [2].

Nodular fasciitis typically presents as a well-circumscribed, rapidly growing soft tissue mass that may be painful or tender. The head and neck region has been described as the third most common location of nodular fasciits [1]. In a review of 28 cases of nodular fasciitis in the head and neck region of children, Carr et al found the parotid gland to be an unusuallocation accounting for only 1 of 28 cases or 3.5% [3].

Typical imaging features of nodular fasciitis are nonspecific. On ultrasound a solitary or lobulated mass with mixed echogenicity and internal color Doppler flow is typical. Posterior acoustic enhancement may also be seen [4]. On MRI a well-defined solitary mass with diffuse contrast enhancement is most common. Remaining signal characteristics appear dependent on histology with myxoid or hypercellular histology demonstrating T1 iso- and T2 hyperintensity and fibrous histology demonstrating T1 and T2 hypointensity relative to muscle [5].

Diagnosis and treatment of these lesions is controversial. Lesions rarely recur and excision is considered definitive treatment. However this treatment has been challenged by Wong et al. [6] who demonstrated spontaneous resolution in 41 of 46 (89%) cases of nodular fasciitis from between 1 to 16 weeks. 5 Wong et al. [6] also showed 88% accuracy of making a definitive diagnosis of nodular fasciitis using fine needle aspiration of these lesions. Their recommendation as well as that of D'Antonio et

al. [7] is to attempt FNA prior to excision, especially in the context of a new rapidly growing mass and history of recent trauma with nonspecific imaging characteristics compatible with nodular fasciitis. If FNA yields a definitive cytologic diagnosis, nodular fasciitis typically has a benign self-limited course and may completely resolve over time thus sparing the patient the risks associated with complete excision.

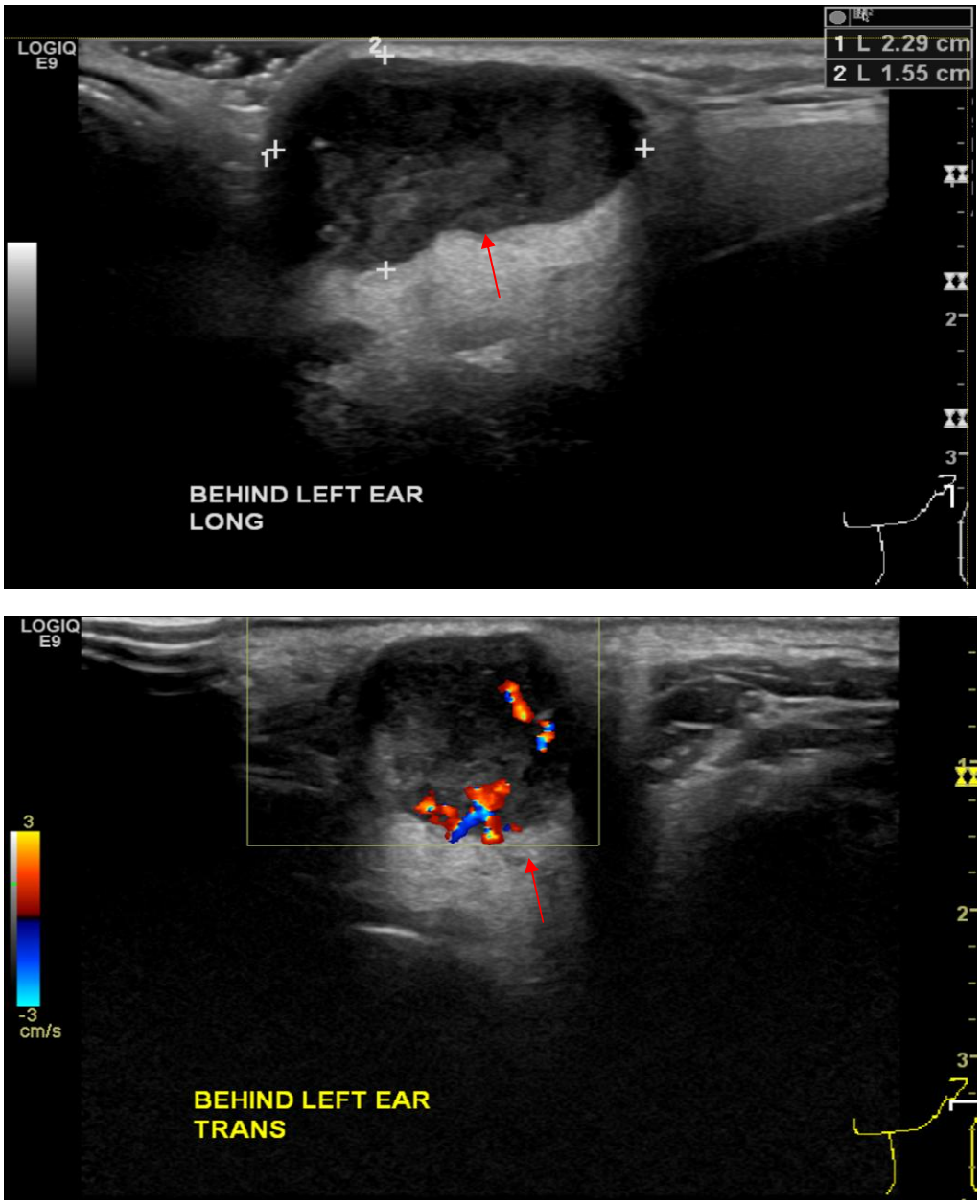

Fig. 1. Ultrasound revealed a 2.3 cm x 1.5 cm x 1.6 cm hypoechoic oval mass with areas of color doppler flow suspicious for malignancy of parotid origin. Biopsy was recommended

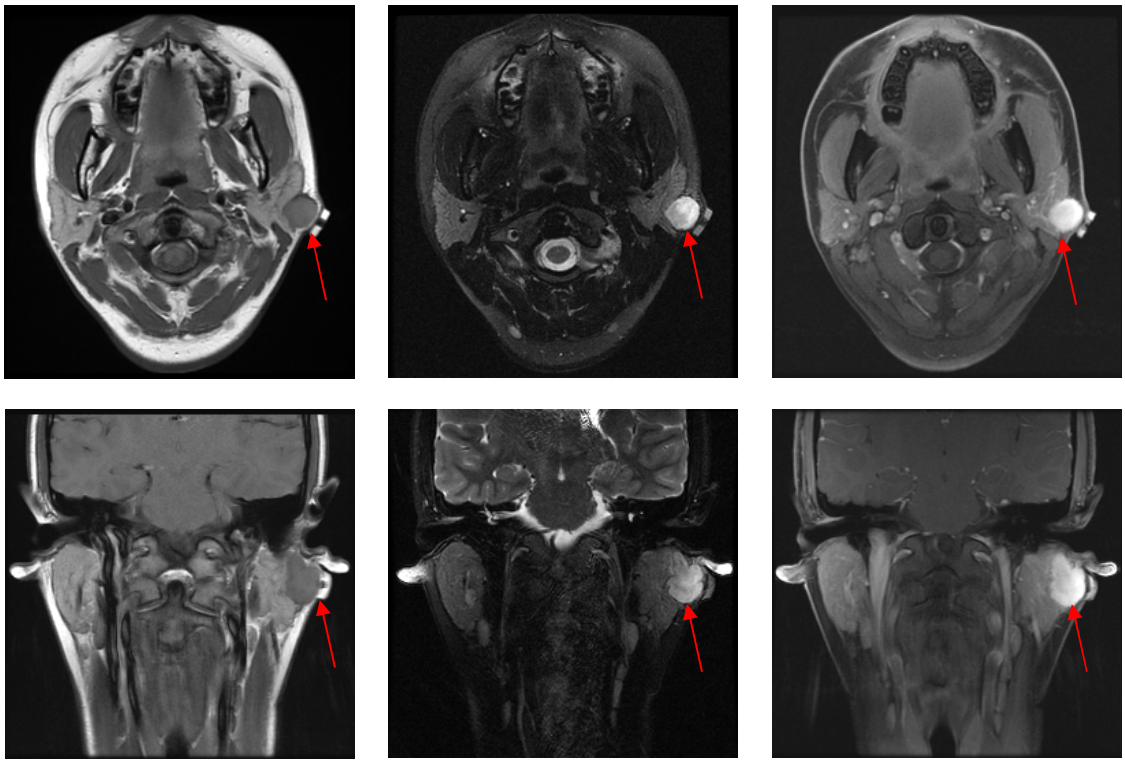

Fig. 2. MRI revealed a well circumscribed heterogeneous and enhancing 2 cm x 3 cm mass in the left infra-auricular region, superficial to the left parotid gland with prominent cervical adenopathy. Impression was that findings were consistent with an inflamed first branchial cleft cyst

4. CONCLUSION

The differential diagnosis for pediatric parotid region masses includes benign and malignant etiologies with nonspecific imaging findings. Nodular fasciitis should be included in the differential diagnosis in the context of a new rapidly growing mass and history of recent trauma. FNA should be considered prior to biopsy or excision, sparing the morbidity associated with invasive procedures as nodular fasciitis typically has a benign self-limited course and may completely resolve obviating the need for further intervention.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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