Unexpected pathologies in pediatric parotid lesions: management paradigms revisited

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ABSTRACT

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss the management of persistent pediatric parotid masses and explain the role of surgery as a diagnostic and therapeutic tool for these lesions. Objectives: To present case vignettes of unusual parotid pathologies and discuss management paradigms in the context of these lesions. Study Design: Retrospective case series. Methods: Five consecutive patients over the past 18 months undergoing parotidectomy for a parotid neoplasm, each with an unusual pathology, were reviewed. Results: Ages ranged from 17 months to 16 years. All presented with a remarkably similar clinical course, consisting of a mostly painless, persistent parotid mass for more than 3 months. Most (4/5 patients) had been treated with antibiotics prior to otolaryngology consultation. Fine needle aspiration (FNA) was performed on 3 patients and was diagnostic in one. Complete excision was performed in each child through a parotidectomy approach (3 total, 2 lateral lobe). The final pathology consisted of metastatic neuroblastoma (17 mos. old), undifferentiated primitive sarcoma (22 mos. old), mucoepidermoid carcinoma (11 years old), nodular fasciitis (12 years old), and hyperplastic lymph node (16 years old). The patient with neuroblastoma died.

Conclusions: The differential diagnosis for a persistent pediatric parotid mass is expansive. In most cases it is impossible to discern the pathology, or rule out malignancy, based upon the clinical course, imaging, or FNA results. Excisional surgical management remains the gold standard diagnostic and therapeutic tool for most patients. Our anecdotal case series highlights the importance of having a low threshold for parotidectomy in these children.

VIGNETTES

Patient #1: A 22-month old white female with a 3-4 month history of left preauricular swelling refractory to antibiotic therapy that was now acutely inflamed. A contrasted CT scan revealed a 2.5 cm isodense left parotid mass with remodeling of the mandibular condyle. Despite clinical improvement, the mass persisted and a parotidectomy was performed. The tumor was deep lobe and well-encapsulated. Frozen section revealed a malignant blue cell tumor with unknown differentiation. The final diagnosis, complicated by lack of differentiation, was primitive undifferentiated sarcoma.

Patient #2: An 11-year old male with a 3-month history of an acute onset 3 x 5 cm firm right preauricular mass. A contrasted CT scan revealed an enhancing, well-circumscribed 3-cm right parotid mass. A fine needle aspiration was non-diagnostic. Total parotidectomy revealed a well-encapsulated tumor extending into the deep lobe and wrapping around the zygomatic branch of the facial nerve. Pathology revealed a nodular spindle cell lesion of variable cellularity staining positive for vimentin, smooth muscle actin, and calponin consistent with nodular fasciitis.

DISCUSSION

Our series highlights the diversity of diagnoses seen in pediatric parotid masses. It also highlights the problems of fine needle aspiration in this population. Patient tolerance of the procedure and difficulties with diagnostic accuracy in the pediatric population has limited its utility. In our series, only one of three aspirates was diagnostic, and, even in that case, we proceeded to parotidectomy due to suspicion of malignancy. The need for conscious sedation or general anesthesia further limits the utility of fine needle aspiration in younger children.

Four of our 5 patients received a CT scan as the initial imaging study in the workup of their parotid mass. One patient received an ultrasound. Magnetic resonance imaging (MRI) was not performed in any patient preoperatively. The utility of imaging in the management of parotid lesions is not debated. Surgical planning with delineation of the peri-parotid anatomy is an important goal of imaging, but some suggest imaging may lead to the diagnosis in most cases.

The management of each of our patients ultimately led to surgical excision by a parotidectomy. Based on our experience and review of the literature, we propose the following algorithm in the figure below for treatment of solid pediatric parotid neoplasms. Importantly, we feel that for most patients, FNA has a limited role in these lesions. Open surgical biopsy via a parotidectomy approach with intraoperative frozen section is the most efficient approach in these patients. At this point in the algorithm, the diagnosis of a surgically treated neoplasm is treated with completion parotidectomy, streamlining the care of these patients and eliminating the need for multiple anesthetics and surgical procedures.

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