Original Article

Surgical Excision of Sebaceous Nevus in Children: What are the Risks?

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Abstract

Background: Sebaceous naevus is a common dermatological condition seen in children. Evidence on the incidence and prevalence of the complication of surgical excision is lacking. **Objectives:** We aim to review our single center's experience in managing paediatric patients with sebaceous naevus in the past ten years. Methods: We retrospectively reviewed the clinical records of patients with surgical excision of sebaceous naevus performed in our center in the past ten years. **Results:** 70 surgical excisions of sebaceous naevus were reviewed. 13% were planned staged excision while 5.7% were unplanned revisional excision. 84% of the excision were performed under general anaesthesia and 4.2% were performed under local anaesthetics. **Conclusion:** A complication rate of 5.7% for unplanned second operation was noted for paediatric patients undergoing sebaceous naevus excision.

Keywords: Children, sebaceous nevus, surgical excision

Introduction

Sebaceous nevus (SN) is a congenital skin lesion usually seen by pediatricians, dermatologists, and surgeons. It is also known as the nevus sebaceous of Jadassohn as it was first described by Jadassohn in 1895.[1] Mehregan and Pinkus[2] outlined three clinical stages of SN: from infancy to childhood, SN usually appears as smooth, alopecic, orange-yellow skin thickening [Figure 1]. A second stage occurs in puberty, when the lesion undergoes morphological changes into more friable, verrucous, and pruritic plaques [Figure 2]. A third stage may occur in adulthood, characterized by the development of benign and malignant tumors in the original SN.

SN is a congenital skin hamartoma involving ectoderm- and mesoderm-derived structures that usually appear in the head and face area. Histologically, it is characterized by the hyperplastic epidermis, sebaceous glands, hair follicles, apocrine glands, and connective tissue.[3] Most SN occurs sporadically, sometimes in association with neurologic, ophthalmic, or other abnormalities (epidermal nevus syndrome), but most affect otherwise healthy children.[4]

The exact malignant potential of SN remains controversial, and the incidence of malignant transformation was quoted, with a wide range from 0.8% to 22%;[5] basal cell carcinoma, squamous cell carcinoma, apocrine and adnexal carcinomas, and eccrine poroma are some of the possible malignant tumors arising from SN. The variability in the reported incidence of malignant transformation of SN could possibly be explained by the large number of lesions that had been excised before malignancy develops.[6]

While literature had discussed the merits and rationale of prophylactic surgical excision of SN, the evidence of the potential surgical complication of such excision is often lacking. We report a retrospective audit of the surgical excision of SN by our pediatric surgical team in a single hospital in the past 10 years.

Methods

Clinical records for "surgical excision for SN" performed in the United Christian Hospital from January 2008 to May 2018 were retrieved. The demographic data of the patients,

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Access this article online

Quick Response Code:

Website: www.jddsjournal.org

DOI: 10.4103/jdds.jdds_27_18

How to cite this article: Tang MY, Chao SY. Surgical excision of sebaceous nevus in children: What are the risks?. J Dermatol Dermatol Surg 2019;23:73-5.

histological reports of the lesions, and all complications were analyzed.

Results

Data from 61 patients, 32 girls and 29 boys, were retrieved; a total of 70 surgical excisions were included. The mean age of patients having excision was 8.7 years (range: 19 months–17 years).

There were 9 (13%) planned staged excisions and 4 (5.7%) unplanned second operations. Staged excision was often performed when the lesion was large (dimension wider than 2 cm) or when it was located at an anatomical area where primary skin closure would be difficult. The second-stage excision was usually performed 6–9 months after the first-stage excision. No skin graft or flap was used in any of the surgical excisions.

For the four unplanned second operations, two were for resuturing of dehisced infected surgical wound over the scalp, occurring at 1 month and 2 months postprimary surgical excision, and two were for recurrent SN at the old surgical excision site: one recurrence at the face 7 years after the primary excision and one recurrence at the scalp 6 years after the primary excision.

All lesions were located on the scalp except two (3%) were at the neck and three (4%) were on the face. The size of the SN ranges from 0.4 to 8.0 cm, and most were of irregular shape [Figure 3].

Most of the surgical excisions (n = 59, 84%) were done under general anesthesia; 8 (11%) were performed under monitored anesthetic care; and 3 (4.2%) were performed under local anesthetics. No patients suffered from anesthesia-related complications. All were performed as a day procedure with the patient being discharged on the same day of the surgery.

Nine (15%) patients received skin biopsies prior to the surgical excision, confirming the diagnosis of SN before the surgical excision. The rest (85%) of the patients underwent surgical excision of the lesion with a clinical diagnosis of SN.

Three (4%) of the 68 resected specimens were not SN; 2 were intradermal nevus and 1 was seborrheic keratosis. Unfortunately, resection margin involvement or clearance was not routinely mentioned in the histology reports. As most patients were not followed after the wound had completely healed, recurrence monitoring was based on the patient's self-surveillance and subsequent referral back to our unit.

Two (3%) patients received skin biopsies after the surgical excision, with clinical suspicion of SN recurrence at the surgical scar site, and both of these two skin biopsies came back to be just scar tissues, ruling out recurrence.

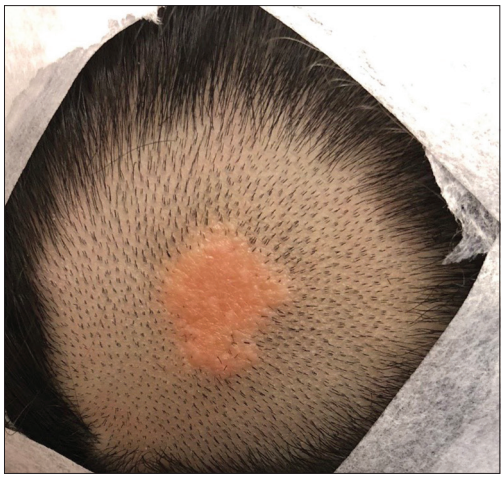

Figure 1: scalp sebaceous naevuse presenting as an orange-yellow skin thickening

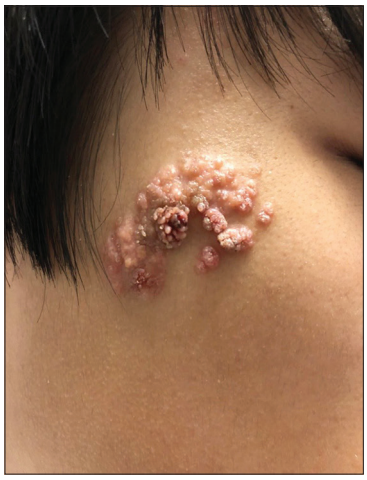

Figure 2: pubertal changes of sebaceous naevus

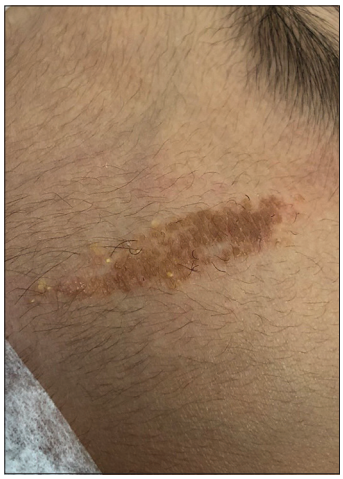

Figure 3: irregularly shaped sebaceous naevus

Discussion

SN has a reported prevalence of 0.3% in neonates,[7] with 95% of lesions located in the head-and-neck region. With increasing awareness and better public education, we believe that there will be an increasing referral of SN in children for surgical excisions, although malignancies that arise from SN usually occur at an older age, well beyond childhood.[8]

Prophylactic surgical excision of SN had been advocated primarily due to the risk of malignant transformation and secondarily for cosmesis and symptoms. An 18-year review[9] concluded that young age and uniform appearance of the lesion are not reliable criteria to reassure that a lesion is truly benign and that all SN should be excised. In addition, an early excision would also often result in a smaller and less disfiguring excision. In addition, an early excision would also often result in a smaller and less disfiguring excision when compared to a delayed excision for a potentially malignant lesion.[6] However, a clinical audit revealed a significant difference in the clinical practice in regard to SN management in different medical specialties: surgeons favoring surgical excisions and dermatologists favoring conservative management.[7] Another potential point of argument against early surgical excision is that when the excision is performed in an older patient, general anesthesia would often not be required. Although staged surgical excision of large lesion would obviate the need for more complex procedure involving flap or skin graft, repeated exposure to general anesthesia in a young child is an important consideration, especially with the recent Food and Drug Administration (FDA)'s change in warning for the use of general anesthesia in patients younger than 3 years old.[10]

Although it is often considered as a simple surgical exercise to remove a superficial skin lesion, our findings revealed that about 5.7% of these excisions are associated with an unplanned second operation, which carries significant surgical and anaesthetic morbidity. As SN should be regarded as a benign lesion that only sometimes undergoes a malignant transformation, usually in adulthood and as a basal cell carcinoma, its treatment should not only be targeted as esthetic improvement of an unsightly lesion but for complete surgical excision. Therefore, alternative management modalities including carbon dioxide ablation, topical photodynamic therapy, dermabrasion, and cryosurgery should not be offered to pediatric patients with SN.[4]

Furthermore, as these lesions usually occur at a cosmetically sensitive area, the appearance of the scar, the presence of hypertrophic scar or alopecia patch over the scar, should also be evaluated in order to provide a comprehensive picture to the parents when deciding the most appropriate treatment option for this common skin lesion. Delineating the resection margin clearance may help to facilitate the establishment of subsequent follow-up.

Conclusion

Significant complication such as unplanned second operation was noted in 5.7% of the patients, half of them was for secondary suture while the remaining half was for treatment of recurrent lesion. Longer term follow up period may be required for clinical monitoring of local recurrence, especially when the resection margin was not clearly mentioned in the histology report.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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