

## Case Report

# Nodular fasciitis of the face: a case report and review of the literature

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**Abstract:** Objective: To Report a case on facial nodular fasciitis and review the published literatures. Methods: A 12-year old girl presented with a progressively enlarging subcutaneous nodule on the left cheek. Results: The nodule was surgically excised. Histologic examination revealed that the result was nodular fasciitis, a kind of pseudoneoplastic spindle cell tumor. Conclusions: Our current report is consistent with ones in literatures. Surgical excision may be likely the most appropriate treatment option.

**Keywords:** Nodular fasciitis, surgical excision

### Introduction

Nodular fasciitis (NF) is characterized by self-limited, pseudosarcomatous reactive process composed of proliferating fibroblasts and myofibroblasts, and it occurs preferentially in the up extremities and trunk [1]. It is probably of a reactive nature and occurs typically in the third to fifth decades of life without sexual predilection [2]. It usually forms a mass that could be confused with myofibromatosis due to their rapid growth. NF of the head and neck region is rarely found, particularly in children. In this study, we reported a case of a 12-year old girl with nodular fasciitis of the face.

### Case report

A 12-year old Chinese girl was referred to us with a 20-day history of a progressively enlarging subcutaneous nodule on her left cheek. Physical examination found a non-tender, firm, immobile, and about 2 cm subcutaneous mass; and the surface was smooth without ulceration or vessels (**Figure 1A**). Ultrasound bio-microscopy indicated an oval hypoecho mass, at approximately 1.92×0.99×1.59 cm. Computed

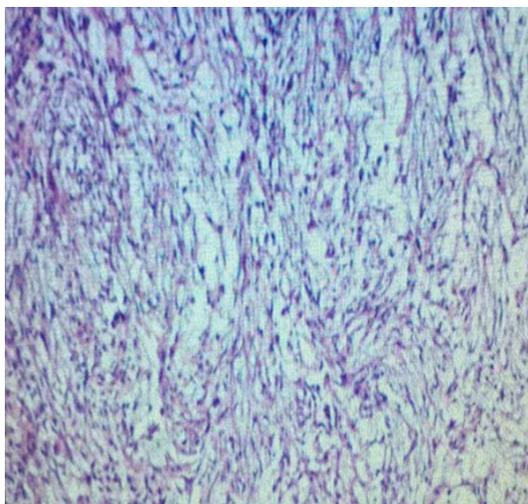
tomography (CT) revealed a well-defined, solid, and cystic mass on her left cheek. Differential diagnosis included atypical conjunctive intraepithelial neoplasia and fibrous histiocytoma. Intraoperatively, the mass seemed to arise from the posterior periosteum which was firmly adherent (**Figure 1B**). Because of the anatomic position of the lesion and its volume, it occupied the entire thickness of the muscle. The lesion was entirely removed with full recovery without any complication and residual scar (**Figure 1C**). The facial nerve was not involved and the tumor was completely excised. One year later, there was no evidence of recurrence.

### Histopathology

An excisional biopsy of the mass was performed with about 0.5 mm surgical margins of excision. Histopathologic report indicated that the plump spindle cells of proliferation with pale-staining oval nuclei and prominent nucleoli arranged in short and irregular fascicles and embedded within a pale myxoid stroma (**Figure 2**). Scattered extravasation red blood cells were visible. Additionally, we could observe the brisk mitotic activity of cells with no sign of necrosis.



**Figure 1.** A: Preoperative: The surface of the lesion with smooth without ulceration or vessels. B: Intraoperative: The mass arising from the posterior periosteum which is firmly adherent. C: Postoperative: Full recovery without any residual scar and complications.



**Figure 2.** Proliferation of plump spindle cells with pale-staining oval nuclei and prominent nucleoli (HE dyeing 100× Histopathologic slide).

### Discussion and literatures review

Konwaler *et al.* first reported NF was a pseudo-sarcomatous fibromatosis and designated it as stressed that the condition was benign in 1955 [3]. It has been reported that NF mostly occurs on the upper extremities (43%), followed by the trunk (25%) and lower extremities (22%), whereas about 10% of NF occurs on the face or neck [4]. Additionally, there have been only 9 cases of facial nodular fasciitis published in the literatures (Table 1) [5-8]. Although the exact etiology is still obscure, NF is postulated to be a reactive process in joint tissue exposed to repeated trauma or inflammation. It usually grows rapidly with or without inflammatory response. In the current case, we reported that the patient was first noticed with a nodule on her face (left

cheek); and it progressively increased in size during the previous 1 month, with no episodes of pain and redness. Additionally, it has been indicated that trauma is one of causative factors, but there has been no report on any significant trauma for the majority of cases (including our patient).

Regarding histopathology, NF is a mass that forms proliferation of fibroblasts and mitotic activity, which may be easily misdiagnosed as malignant tumors of the same species soft tissue sarcomas such as leiomyosarcoma, fibrosarcoma, rhabdomyosarcoma and sarcomatoid [9, 10].

Although CT would contribute to determine the spread of the lesion, the results of images are non-specific, and some tumors might not be ruled out [11]. Ultrasonography may be considered, but the findings are also non-specific [8]. Berry *et al.* indicated that fine-needle aspiration biopsy (FNAB) could be used for accurate diagnosis of NF, refraining from surgical excision in the cases with a typical clinical feature [12]. Thus, a biopsy is necessary for the alternative methods of diagnosis. Meanwhile, surgical excision remains the optimal standard treatment for majority lesions. McClintic *et al.* reported that treatment of ocular nodular fasciitis was surgical excision [13]. Celentano *et al.* described that after a mandatory incisional biopsy, a 4 to 6-week period of follow-up could be considered because of the possibility of spontaneous regression of the lesion [14]. In addition, Grobmyer *et al.* investigated that once the diagnosis is confirmed, local excision or observation without operation could be appropriate [15].

## A case report on nodular fasciitis

**Table 1.** Reported Cases of Facial Nodular Fasciitis in the literatures

Reports	Trauma history	Locations	Tissue Structures	Sex	Age (yr)	Duration
Kim [5]	No	Zygomatic	Spindle cell	F	18	3 months
Kim [5]	No	Zygomatic	Spindle cell	M	35	1 month
Ren and Zhang [6]	Yes	Zygomatic	Spindle cell	M	26	3 months
Ren and Zhang [6]	No	Cheek	Plump cell	M	11	12 months
Oh and Kim [7]	No	Zygomatic	Spindle cell	M	58	3 weeks
Oh and Kim [7]	Yes	Infraorbital	Spindle cell	F	44	10 months
Oh and Kim [7]	No	Infraorbital	Spindle cell	M	34	5 months
Oh and Kim [7]	Yes	Cheek	Epithelioid cell	M	49	6 months
Shibata and Yanaba [8]	Yes	Cheek	Spindle cell	M	30	2 months
Current Study	No	Cheek	Spindle cell	F	12	3 weeks

In the present case, after the surgical excision, our patient had full recovery without any complications with more than one year of follow-up. NF of the head and neck region rarely occurs, particularly in the face of children. In conclusion, we present the case of a 12-year old girl with a facial nodular fasciitis. Our current case highlights a rare entity after complete excision and needs no any repair for sufficient complete recovery of the face.

### Disclosure of conflict of interest

None.

### Abbreviations

NF, nodular fasciitis.

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