
Case Report

VOLAR APPROACH TO EXTIRPATE SUBUNGUAL GLOMUS TUMOR: REPORT OF TWO CASES

Ahmad-Reza Afshar MD^{*}, Isa Abdi-Rad MD PhD

Glomus tumor is a rare vascular tumor with a predominant subungual location in the hand. Different dorsal transungual surgical approaches have been described for excision of glomus tumor. In this report, the volar approach has been used for extirpation of subungual glomus tumor with osseous erosion and perforated distal phalanx in two patients. When feasible, by applying volar approach, the risk of nail deformity, which is a major concern after the tumor excision, can be eliminated.

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Introduction

Glomus tumor is a benign growth of glomus body, an arterio-venous anastomosis, which controls blood circulation. Glomus tumor is characterized by a triad of exquisite pain, tenderness, and cold sensitivity. The most common site is the subungual region, which may present as a purple-bluish macule in the nail bed and nail deformity, with approximately 75% of the lesions occurring in the hand. Love's pain test, Hildreth's test, and transillumination test are used to diagnose and localize the lesion.¹⁻³ The frequency of osseous erosion in subungual glomus tumor has been reported to be approximately 22% to 50%.^{4,5}

Surgical removal of the tumor is the recommended treatment.

Case Report

Two patients were referred due to extreme pain in their hands. The first patient, a 70-year-old woman with pain in her left middle finger for 10

years and, the second one, a 12-year-old girl with pain in her right thumb for one year. Both of them had point tenderness over a visible purple-bluish macule in their nail bed and cold sensitivity. Their nails did not show any deformity. X-rays revealed osseous erosions in the affected areas (Figures 1 and 2).

A needle was passed from dorsal towards the volar surface of the finger through the nail plate, nail bed, the visible tumor—which clinically was diagnosed as glomus tumor—and then the osseous erosion (Figures 3 and 4). Passage of the needle through the lesion confirmed that the tumor had



Figure 1. Bone defect in the distal phalanx of the left third finger in a 70-year-old woman.

Authors' affiliation: Department of Orthopedics, Urmia University of Medical Sciences, Urmia, Iran.

•Corresponding author and reprints: Ahmad-Reza Afshar MD, Department of Orthopedics, Motahari Hospital, Urmia University of Medical Sciences, Urmia, Iran.

Fax: +98-441-2234115, E-mail: afshar@umsu.ac.ir.



Figure 2. Osseous erosion in the distal phalanx of the right thumb in the 12-year-old girl.

perforated the distal phalanx. Via a longitudinal incision on the volar surface of the finger—which was less than one centimeter in length and did not cross the flexion crease of the distal interphalanx—



Figure 3. Passage of a needle from dorsal towards volar surface of the left third finger through the tumor.

the passage line of the needle was followed leading to the tumor, which was scooped out completely (Figures 5 and 6).



Figure 4. Passage of a needle from dorsal towards the volar surface of the right thumb through the tumor.



Figure 5. Complete excision of the glomus tumor from the left third finger.

Histopathological study of the excised lesions confirmed the diagnosis of glomus tumor.

Discussion

Treatment of subungual glomus tumor is a complete surgical excision. Two major concerns following surgery are recurrence and nail deformity. Complete extirpation of tumor prevents recurrence. Appropriate management of the nail plate and the nail bed can reduce the concern for nail deformity.

To reach the nail bed, different managements for the nail plate are recommended. Classically, dorsal transungual approach with or without nail removal has been the most common approach used⁴⁻⁶; creating a window through the nail plate,² partial resection of the nail plate, and replacing it back to its place.⁷ Reflecting the nail plate upward from distal to proximal,⁸ has been suggested for the prevention of the nail deformity. Using the aforementioned technique for excision of the



Figure 6. Complete excision of the glomus tumor from the right thumb.

tumor, the nail bed is incised and after removal of the tumor, the nail bed must be repaired meticulously.

Alternatively, the nail and the nail bed could be elevated together from the terminal phalanx by a U-shaped incision around the side and free margin of the nail. Then, the glomus tumor can be removed from underneath the deep aspect of the nail bed.⁹

In both patients described here, subungual glomus tumors were accompanied with bone erosion and perforated distal phalanx. Access to the lesions via volar approach was accomplished easily and the lesions were removed completely. No recurrence, pulp tenderness, and nail deformity detected, after a year of follow-up. Volar approach enables surgeons to enlist an alternative solution for the treatment of subungual glomus tumor accompanied with bone erosion and perforated distal phalanx. It circumvents nail plate and nail bed problems.

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