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**Keloid formation on neck after jugular central venous catheter placement: An unsightly unusual complication in a young female**

Sir,

Errors in wound healing can lead to chronic non-healing wounds or aggressive scar formation as seen in keloids or hypertrophic scar.<sup>[1]</sup> An 11-year-old girl presented with severe holocranial headache for

10 days. She also had high-grade fever for 5 days. On examination, she was conscious, oriented with stable vitals. On neurological examination, a pronator drift on the right side was observed. Contrast-enhanced magnetic resonance imaging brain revealed a large left frontal abscess with mass effect which required surgical drainage. The patient underwent left frontal craniotomy and excision of abscess under general anaesthesia. The patient required prolonged (2 weeks) post-operative antibiotic therapy for the treatment of brain abscess. Right internal jugular central venous catheter (Arrow® 7 Fr triple-lumen central venous catheter) was placed under ultrasound guidance in a single attempt for the administration of intravenous antibiotics. The jugular venous catheter was fixed on the side of the neck with nylon 3-0. Intra-operative and post-operative stay were uneventful. Central venous catheter was removed on post-operative day 14 after intravenous antibiotics were stopped. At 5 months follow-up, the patient presented with scars at the site of central venous catheter fixation [Figure 1] which had continued to grow in size since then. They were tender on palpation and much larger than the usual scar of the stitch fixation which was suggestive of keloid formation. She had no history of keloid formation elsewhere on the body. Moreover, her surgical scar on the scalp healed well. Treatment was started with sequential intralesional triamcinolone (20 mg) injections at 3 weekly intervals and a silicone gel for local application. At 2 months follow-up, neck lesions had considerably decreased in size as described by the patient over telephone since the patient could not come in person.

Keloids tend to occur immediately after trauma and continue to grow even months after the initial insult resulting in a raised erythematous scar.<sup>[1,2]</sup> In most cases, trivial trauma such as needle stick injury is responsible. In contrast to a hypertrophic scar, keloids grow beyond the boundaries of the original scar.<sup>[2]</sup> They typically occur between 10 and 30 years of age and do not show gender predilection. Dark-skinned races (such as African, Asian or Hispanic) are more commonly affected.<sup>[1]</sup> In Asian patients, however, neck keloids may not be associated with keloids elsewhere on the body.<sup>[1]</sup>

Elevated levels of transforming growth factor beta and platelet-derived growth factor have been implicated in the pathogenesis of keloid formation.<sup>[1]</sup> Familial cases have also been reported. The patient had no such family history. Intralesional injection of corticosteroids (such as triamcinolone,



**Figure 1:** Clinical image showing multiple keloid formation at the site of fixation of jugular central venous catheter

dexamethasone, or methylprednisolone) done over multiple sittings form the first-line treatment.<sup>[1]</sup> There are no data available to recommend one steroid or dosing regimen over the other. Large keloids may require surgical debulking followed by adjuvant chemotherapy (5-fluorouracil, gamma-interferon) and/or radiotherapy to reduce recurrence rates.<sup>[1,2]</sup>

Placement of catheter at visible sites such as neck should be avoided in patients with personal or family history of keloid formation. Since this complication is highly under-reported, the exact incidence of keloid formation after placement of the catheter at various sites cannot be commented on. Use of mono-filament sutures, application of 'reef knot' and gum plastic adhesives for fixation of the central venous catheter may reduce the incidence of such a potentially avoidable complication. When using sutures, one must apply the knot snugly and avoid 'strangulation'.

Keloid formation on the neck after central venous catheter can lead to the formation of an unsightly scar. Contributory family or personal history may not be available in all cases. As the lesions are usually small, intralesional injection of steroids is usually the first-line treatment.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and

due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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#### Conflicts of interest

There are no conflicts of interest.

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#### REFERENCES

1. Sidle DM, Kim H. Keloids: Prevention and management. *Facial Plast Surg Clin North Am* 2011;19:505-15.

2. Hunasgi S, Koneru A, Vanishree M, Shamala R. Keloid: A case report and review of pathophysiology and differences between keloid and hypertrophic scars. *J Oral Maxillofac Pathol* 2013;17:116-20.

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