

## A rare complication after circumcision: Keloid of the penis

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**Abstract.** Keloids are benign hyperproliferative growths of dermal collagen that usually result from excessive tissue response to skin trauma. Although benign, they may be seen as a painful and/or pruritic lesions. A 15-year-old boy was admitted to our clinic with an enlarged scar and pain on the penis for about 1 year after a routine circumcision operation. Complete surgical resection of the lesion was done and histopathological examination revealed keloid of the penis.

**Key words:** Circumcision, Keloid, Penis

### Introduction

Keloid is a skin abnormality that is unique to humans and is characterized by excessive deposition of collagen in the dermis and subcutaneous tissues secondary to traumatic or surgical injuries [1, 2]. Although penis is frequently subjected to surgical manipulation such as circumcision, keloid on penis is exceptionally rare [1].

### Case report

A 15-year-old boy complaining of an enlarged scar and pain on the penis for about 1 year after a routine circumcision operation admitted to our outpatient clinic. The circumcision was performed for traditional reasons at the age of 14 without any early post-operative complications. His past history was unremarkable and he and members of his family had no history for either keloid or hypertrophic scar formation. In physical examination, a circular-shaped, erythematous keloid lesion around the coronal sulcus at the site of the circumcision was noted (Figure 1). Complete surgical resection of the lesion was done with a 1-stage surgery in our outpatient surgical unit with local anesthesia. Histopathological analysis of the surgical specimen revealed irregular, thick, glassy,

dense collagen bundles which are characteristic of keloid lesions (Figure 2). Immediately after resection and closure of the wound, steroid injection to the wound was performed with 24 G needle. He had no recurrence after an uneventful 1-year follow up.

### Discussion

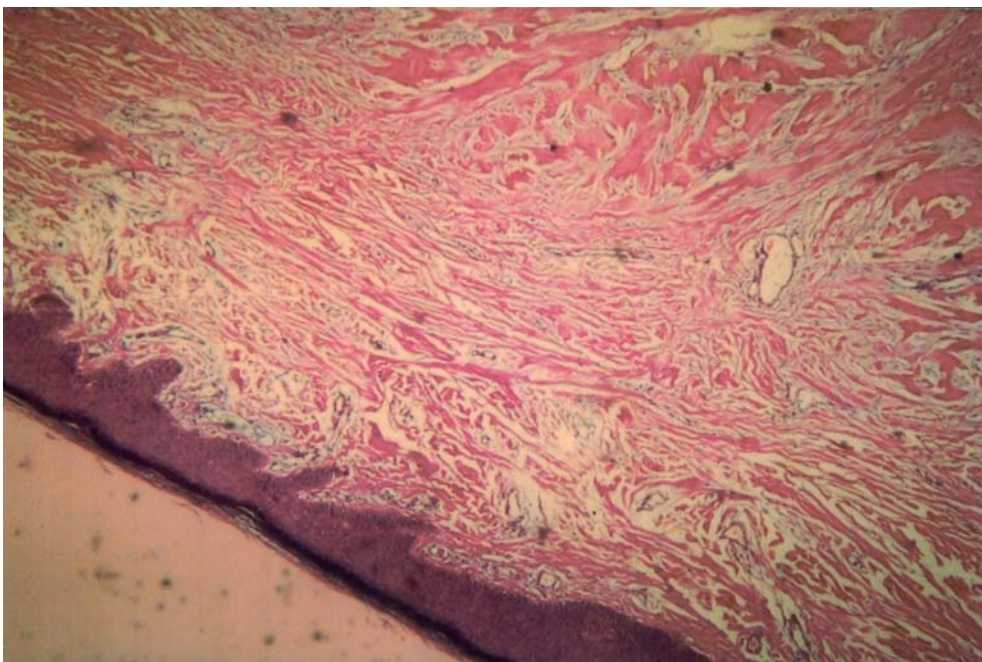
Keloid is a benign overgrowth of scar tissue occurring primarily in the dermis of persons 15–45 years of age [3]. Our patient was 15 years old. In the etiology minor infections, tattooing, cautery, laparotomies, presence of foreign material, hematoma, excessive tension on skin closure and various minor and major surgical procedures have been proposed [4]. Keloids are characterized by a fibrocollagenous proliferation [5]. The increase in glycosaminoglycans and collagen is thought to be due to increased activity of fibroblasts. Increased numbers of mast cells may also stimulate collagen synthesis. Furthermore, endothelial cell proliferation may cause vessel occlusion. After this condition hypoxia appears. Hypoxia leads to a revascularization process that is responsible for the formation of the collagen nodules. There is also evidence to support a role for immune mechanisms in the pathogenesis of keloids [5, 6].



*Figure 1.* A circular-shaped keloid lesion around the coronal sulcus at the site of the circumcision is seen.

The deltoid, the presternal area, the back and the posterior neck are the most susceptible regions to form such lesions. Keloid formation on the penis is exceptionally rare even though the penis is

frequently subjected to surgical manipulations such as circumcision [7, 8]. Circumcision is frequently performed in many communities around the world. Hemorrhage, penil ischemia, shortening



*Figure 2.* The appearance of irregular, thick, glassy and dense collagen bundles.

of the shaft skin, meatal stenosis, urethral fistulas, partial or total loss of phallus are the potential major complications of this procedure [3, 5]. Keloid as a complication after circumcision was reported in a very few patients in the literature [3–5]. Keloid usually manifests as well circumscribed round, oval or linear elevations of the skin [3]. It may be asymptomatic, but more often patients complain of itching, tenderness, enlarged scar and pain like our patient. Furthermore, it may be solitary or multiple [1–5].

Numerous treatment modalities have been attempted to minimize the local recurrence of keloids. Surgical excision and intralesional steroid injection is the most common treatment modality [8]. The rate of local recurrence for surgical excision alone may be up to 100%. On the other hand, surgery combined with topical injection of corticosteroids reduces the local recurrence rates below 50% [1, 9, 10]. In our patient, intalesional steroid injection was performed after the surgical resection and in a 1-year follow-up no recurrence was noted.

Eventually, we learned from this case that, keloid of the penis may be seen as an uncommon complication after circumcision and it can be treated with steroid injection after local excision successfully.

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