Adjacent tissue skip metastasis of keratoacanthoma on the nose tip: A case report

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ABSTRACT

Keratoacanthomas (KAs) originally considered benign tumour, but some researchers believe that KA is a borderline tumor or a subtype of squamous cell carcinoma. Few distant metastasis of Kas has been reported. A 42-year-old woman presented with a 1.8 x 1.8 cm keratoacanthoma (KA) of the nose tip. After 1 month of her radiotherapy, two neoplasms of KA developed from the bridge of the nose, 1cm and 3.4 cm away from the primary focus. To the best of our knowledge, no case of adjacent tissue skip metastasis of KA on the nose tip have been reported to date.

Keywords: Case report; Metastasis; Keratoacanthomas; Superficial X-ray therapy

BACKGROUND

Keratoacanthoma (KA) is a common skin tumour in dermatology. It manifests as a rapidly growing, well-differentiated, squamoid lesion with a predilection for sun-exposed sites in the elderly[1]. KA is composed of keratin-plugged, cutaneous, crater-shaped nodules that arise spontaneously. Some KAs tend to spontaneously involute, and they may grow to a size of 1–2 cm before involuting[2]. However, owing to their tendency for regression, KAs have been categorized as biologically benign tumours with distinct pathophysiological mechanisms from those of malignant cSCC[1]. Thus, rare cases of distant metastasis purported to originate from KA can be found in the literature[1]. Here, we have reported the case of adjacent tissue skip metastasis of KA on the nose.

Case report

A 42-year-old woman presented to our clinic with a 1.8 x 1.8 cm red nodule on the nose tip (Figure 1A). It had been present for the past 8 months and was slightly itchy, painless, and progressively increasing in size. No other associated symptoms or history of trauma to the nose or prolonged exposure to sunlight was reported. A skin biopsy revealed histopathological architecture, suggestive of KA (Figure 2A). The patient did not treat the nodule earlier, but occasionally squeezed it. Owing to the cosmetic issues involved, she refused surgery. Thus, superficial radiotherapy (SXRT; Sensus Healthcare, Boca Raton, FL, USA) was performed. SXRT was administered at one fraction of 3.8 Gy every 4 days for 12 fractions, for a total dose of 45.6 Gy. The irradiation field included a 0.6-cm adequate margin of normal skin around the lesion. The lesion was completely removed after radiotherapy (Figure 1B). After 1 month of radiotherapy, she noted two red nodules arising from the bridge of her nose at 1 cm and 3.4 cm away from the primary focus (Figure 1C). The nodule did not absorb after 15 days of treatment with mupirocin ointment and amoxicillin. Therefore, the pathological examination was performed, and the results confirmed the same pathological type of KA as that recorded earlier (Figure 2B).

DISCUSSION

KA is generally characterized by the rapid growth of dome-shaped nodules with a central plug of keratin[3]. KAs have been considered a variant of cutaneous squamous cell carcinoma (cSCC) and are often reported as KA-type cSCC[1]. The literature on purported metastases from KAs is rare. Jacqueline et al. analysed 445 cases of KA from 113 published articles and found that none of the cases resulted in death or distant metastases[4]. KA usually invades the surrounding tissues and does not metastasize. In the present case, two nodules were observed arising from the bridge of the nose at 1.0 cm and 3.4 cm away from the primary focus region. This is the first report of skip metastasis of KA on the nose.

The treatment of KA includes chemotherapy, surgery, photodynamic therapy, and others. Surgical resection is the first-line treatment for KA[5] as most KA patients prefer it. In consideration of the cosmetic request of the present patient, however, radiotherapy was applied. The literature has a few reports on radiotherapy for KA, with studies suggesting radiotherapy as a highly effective treatment for KA with excellent cosmetic outcomes[5, 6]. There is no uniform standard for the total, fractional dose, radiation dose, and time of radiotherapy for KA. However, considering the similarity between KA and SCC, we applied a high dose of 45.6 Gy of radiotherapy for this tumour, which resulted in complete remission of the primary lesion.

The danger triangle of the face consists of the area from the bridge of the nose to the corners of the mouth[7]. In this region, the veins are valveless and communicate freely through the angular vein with superior ophtalmic[8]. Thus, infection in this area can spread easily without blocking the valves, especially with an external force. In our case, the patient occasionally squeezed the lesion both before and during the treatment. One month after the radiotherapy was completed, two rapidly growing nodules were observed near the original site of KA, and a biopsy confirmed the same pathology as earlier. It is highly suspected that the external pressure applied by the patient forced the tumour cells to gradually grow through the valveless veins of the facial veins.

KA tends to invade the surrounding skin area, but it may present as adjacent tissue skip metastasis under a trigger by an external force in the valveless area of the danger triangle of the face. Nodules present in this area should be treated with vigilance and any external force should be forbidden.

Figure Legends

Figure 1. (A) KA before therapy. (B) The lesion showing complete remission after therapy. (C) Two nodules arose from the original lesion.

Figure 2. (A) Histological observation after haematoxylin-eosin staining of the lesion before radiotherapy (original magnification, X20). (B) Histologic observation after haematoxylin-eosin staining of a new keratoacanthoma after radiotherapy (original magnification, X20).

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Conflicts of interest

All authors have contributed to the writing of the manuscript.

Data availability statement

Data availability is not applicable to this article as no new data were created or analyzed in this study

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