Cutaneous actinobacillosis: report of a rare infective condition

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DESCRIPTION
A 21-year-old immunocompetent female hailing from a rural eastern Indian village, farmer and cattle herder by profession, presented with several asymptomatic lumps and bumps over her neck. It had started developing as a solitary pea-sized swelling on the neck which gradually progressed over 2 years to involve the entire front of neck and lower jaw. There was no history of discharge, similar swelling elsewhere or any family history of such lesions. In the same duration, a cow in her farm had been afflicted with a similar nodulocystic cutaneous predication and died a few weeks prior to present consultation. However, no specific diagnosis could be reached by treating veterinarian. Cutaneous examination revealed a 16 × 8 cm hyperpigmented plaque studded with skin coloured to brownish-black papules and nodules overlying the anterior neck and submandibular area. Few clear fluid-filled cysts which demonstrated positive transillumination test were also noted (figure 1A). Examination of patient’s other mucocutaneous sites, regional lymph nodes and organ systems did not reveal anything unusual.

Her baseline laboratory investigations revealed mild anaemia. No bony involvement was noted on X-ray of chest and mandible. Skin biopsy from a representative nodule revealed sulphur granules surrounded by neutrophils in an area of granulomatous tissue, further encased by filamentous gram-negative bacillary structures (figure 1B,C). Fungal staining and modified Ziehl-Neelsen stain (1%) was negative. Culture of fluid aspirate from cyst grew out Actinobacillus lignieresii, sensitive to tetracycline. The material and isolated bacterial colonies were also positive in PCR for ribosomal RNA gene 16S for A. lignieresii. Based on these findings, a diagnosis of cutaneous actinobacillosis was established. She was started on tablet doxycycline 100 mg two times per day; significant lesional resolution with resultant scarring was seen after 4 weeks of doxycycline therapy (D).

Figure 1 Hyperpigmented plaque studded with multiple papules, nodules and fluid-filled cysts over anterior aspect of neck (A) sulphur granule in dermis (H&E stain, ×40) (B) numerous filamentous bacillary structures and neutrophils encasing the sulphur granule (H&E stain, ×400) (C) resolution of lesion with scarring after 4 weeks of doxycycline therapy (D).

Learning points

► Actinobacillosis is mainly a zoonotic disease affecting cattle, sheep and horses. Human infection has rarely been reported. Isolated cutaneous affection without underlying organ involvement is an uncommon presentation.
► The combination of specific exposure and clinical pattern should induce a high index of suspicion regarding this rare infective condition.
► Actinomyositis serves as an important differential and must always be ruled out.

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REFERENCES