Wound Breakdown due to Prominent Spinous Process in a Patient with Dish, an Unusual Cause: A Case Report and Review of Literature

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Abstract

Wound breakdown of the operative incision can be a devastating complication. Persistent problems with healing can lead to overlying skin loss and thus exposing underlying structures. Patients with underlying metalwork can further increase risk of poor wound healing. Surgical wound healing is a multifactorial event.

Wound breakdown due to underlying prominent spinous process at cervico-thoracic junction has not been reported in literature. We report a unique case of this complication following posterior spinal fixation of lower cervical vertebra fracture in-patient with underlying Diffuse Idiopathic Skeletal Hyperostosis (DISH) disease.

ABBREVIATIONS

DISH: Diffuse Idiopathic Skeletal Hyperostosis

INTRODUCTION

Wound breakdown of the operative incision is uncommon but well recognized complication. Surgical wounds are more liable for breakdown due to infection or poor healing with underlying inflammatory conditions [1]. Wound breakdown following posterior spinal surgeries could be due to variety of factors like, poor surgical technique, soft tissue injury, postoperative haematoma, infection, prominent metalwork and poor host response [2].

Wound breakdown due to prominent spinous process at cervico-thoracic junction has not been reported in literature. We report a unique case of this complication due to prominent spinous process following posterior spinal fixation of lower cervical vertebra fracture in-patient with underlying Diffuse Idiopathic Skeletal Hyperostosis (DISH) disease.

CASE PRESENTATION

A 51-year-old male patient referred from District general Hospital (DGH) to regional spinal unit with a history of fall under influence of alcohol leading to hyperextension injury to the neck. During his initial management at DGH, the patient was assessed as per ATLS protocol and the diagnosis of cervical spine fracture was made. There was no neurological deficit and hard collar was used to support the neck. The patient underwent further imaging in the form of CT and MR scan which identified unstable lower cervical spine fracture at C-6 level with incidental finding of DISH.

Patient was further reviewed in our unit and repeat imaging revealed increasing kyphosis at the fracture site. Considering increasing deformity the option of surgical intervention was discussed with patient. The patient was then treated with halo traction for a week and subsequently underwent posterior cervico-thoracic fixation (C3-T2) and fusion. There were no reported immediate or early complications following this surgery. One year following surgery the patient presented with wound breakdown with prominence of Cervical seventh (C7) and Thoracic first (T1) spinous process. The bridging skin between these two vertebrae was healed. The patient was then investigated to rule out any underlying deep infection with blood test for inflammatory markers and further imaging. The repeat imaging revealed no evidence of underlying fixation failure and hence the decision of trimming the prominent spinous process was taken. During surgery C7, T1 spinous processes were trimmed to make sure the overlying skin could be approximated without any tension. The bone wax was used to seal the raw end of spinous processes. The tissue samples were sent for both microbiology and histology to rule out any evidence of osteomyelitis. The patient made satisfactory recovery following this intervention and wound healed without any further wound problems.
DISCUSSION

Diffuse Idiopathic Skeletal Hyperostosis (DISH) is a non-inflammatory disorder with unknown etiology. It was first described in 1950 by Forestier and Rotes-Querol. It is characterized by ossification of spinal and extra spinal ligaments. An ossification of longitudinal ligament gives appearance of melting candle wax dripping down to spine [3,4].

Patients with DISH are prone to have unstable spinal fracture with trivial trauma. It is very important to rule out any other co morbidities like diabetes mellitus, hyperlipidaemia, hyperuricemia associated with this clinical entity. Wound breakdown in spinal operation are reported due to infection, haematoma, failure of implant and patients with previous radiotherapy [5,6].

We think the patient undergoing posterior spinal surgery especially at cervico thoracic junction are more prone for disruption of soft tissue repair as shoulder girdle movement would exhibit tensile force across repair. With this theory there is possibility of underlying prominent spinous process to gape through the soft tissue cover and hinder the wound healing.

CONCLUSION

Wound breakdown due to prominent spinous process is uncommon but in presence of underlying metalwork can be devastating. We suggest prophylactic trimming of the spinous process during primary surgical intervention in patients undergoing posterior spinal surgery at cervico-thoracic level.
and likely to have an increased junctional kyphosis. This minor additional procedure may avoid any further complications like wound break down due to prominent spinous process as described in our case.

REFERENCES


