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Case Report

Use of iodine tincture in the management of wound dehiscence in operated mandibular fracture along with hardware salvage: a case report

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ABSTRACT

Mandibular fractures are one of the most common facial fractures. Depending on the severity, they are treated either by closed reduction or open reduction and internal fixation. Hardware exposure is one of the postoperative complications associated with the latter. Data involving decision regarding removal or salvage of hardware in such cases is lacking. We present a case of wound dehiscence with hardware exposure in an operated mandibular fracture, which was managed by placing tincture iodine dressing, thus obviating the need for hardware removal.

Keywords: Fracture, Wound dehiscence, Hardware exposure, Salvage

INTRODUCTION

Mandibular fractures are the most common fractures of the facial region.[1,2] Management of these fractures is done to re-establish normal occlusion, masticatory function and esthetics. Conservative treatment involves immobilization of the mandible for the bone healing to take place. This requires intermaxillary fixation using dental wiring, arch bars, cap splints, and gunning splints.[3,4] Operative treatment of mandibular fractures involves intraoral or extraoral opening of the fracture site and direct osteosynthesis with transosseous wires, lag screws, or bone plates.[5-7]

However, a number of complications can be associated with internal fixation of the mandibular fractures. One such complication is wound dehiscence that can cause hardware exposure. Most common causes of wound dehiscence include strong mentalis muscle pull, poor suturing technique, contamination, infection, and smoking habits.[8] Lack of robust blood supply to the soft tissues can also be one of the causes. Here we describe a case of an adult female patient who developed wound dehiscence after undergoing open reduction and internal fixation of the malunited parasymphysis fracture on the left side, and was given iodoform dressing for the same.

CASE REPORT

A 22-year-old female patient had reported to the department of oral and maxillofacial surgery at ITS Dental College, Muradnagar with difficulty in eating and chewing for 6 months. The patient had met with an accident 6 months back but she could not get her treatment done on account of financial problems. Hence the fracture that she suffered got malunited. After all the necessary clinical, radiographic and laboratory investigations were done, the patient was prepared for open reduction and internal fixation under general anesthesia. A degloving incision was used to expose the fracture site. The malunited fracture was osteotomized using mallet and osteotome. After the segments had been mobilized the patient was put

in MMF prior to fixation using plates. A 2 mm four-hole miniplate was placed on the superior border while the inferior border was fixed using a 2.5 mm four-hole miniplate. The surgical site was closed using 3.0 vicryl suture.

On the second day of follow-up the patient turned up with wound dehiscence with the internal hardware exposed (Figure 1).

Figure 1: Wound dehiscence with exposed plate at 2nd day follow-up.

Irrigation of the area was done using betadine and normal saline. We decided to attempt managing the condition without having to perform hardware removal. Hence an iodine tincture-soaked gauze was placed on the exposed site and it was replaced every third or fourth day till the granulation tissue was formed and the exposed bone and the plate were completely covered (Figure 2). No hardware removal or second operation was required in this case as the result was satisfactory without any discomfort to the patient.

Figure 2: Exposed area completely covered with granulation tissue by 1 month.

DISCUSSION

Cases of wound dehiscence are treated by irrigation and wound debridement and then allowed to heal by secondary intention. Many cases require hardware removal while other cases where fracture get infected also require incision and drainage along with antibiotic coverage.

The data needed to decide whether the hardware needs to be preserved or removed is limited. Most of the studies have reported hardware removal as the solution in cases of infection or hardware exposure. Some authors have even recommended routine removal of the hardware after three months of fixation. However, most of the authors agree that it is safe to leave the asymptomatic plates instead of removing them.[9]

Evidence supporting the salvage of hardware during the management of the complication of plate exposure in maxillofacial fractures is lacking. Hence, we report a case where such a case was managed by covering the exposed area of operated mandibular fracture with iodine tincture-soaked gauze to prevent infection and allow for the formation of granulation tissue, thus allowing the plates to remain in-situ.

Iodine has been used as an antiseptic since a long time. Combined with ethanol it is used in patients with acute wound, chronic ulcers, pressure ulcers and in patients with skin grafts. Though it is effective in reducing the bacterial load and promotes wound healing. it can also be associated with adverse effects in some cases. These effects include allergic reactions, toxic effects on the host cells and changes in thyroid functions.[10]

Use of iodine plus ethanol in the management of such postoperative complication in maxillofacial trauma has not been reported earlier. The combination was successfully used in our case without any adverse event and serum T3 and T4 levels remained within normal range.

CONCLUSION

Tincture of iodine dressing, if not leading to adverse events, can be an effective measure for the management of postoperative wound dehiscence in mandibular fractures in which hardware has been exposed, thus obviating the need for hardware removal that might lead to morbidities. Hardware removal should only be performed if other measures fail to let the exposed area get covered with granulation tissue while letting the hardware remain in-situ. Due to lack of evidence in the literature, a greater number of cases are required to be reported in the future, where such attempts are made before deciding to go for hardware removal.

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