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Comminuted Le Fort Fractures with Palatal Involvement in a Geriatric Patient: A Case Report

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Abstract: Le Fort fractures are complex midfacial injuries often resulting from high-energy trauma. Management becomes particularly challenging in elderly patients with comorbidities, where surgical intervention must be tailored to minimize risk. This case report describes a 68-year-old male who sustained multiple facial fractures, including Le Fort I, Le Fort II, and palatal fractures, following a fall. The patient underwent closed reduction and fronto-central suspension wiring, with satisfactory postoperative recovery. The report highlights diagnostic considerations, treatment planning, and postoperative rehabilitation, with a literature review on geriatric maxillofacial trauma.

Keywords*: Le Fort Fracture, Palatal Fracture, Geriatric Trauma, Closed Reduction, Suspension Wiring.*

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I. INTRODUCTION

Le Fort fractures, classified into three types by René Le Fort in 1901, remain a cornerstone in midfacial trauma diagnosis. Le Fort I involves a horizontal fracture above the maxillary alveolar process, Le Fort II is pyramidal with orbital rim involvement, and Le Fort III constitutes craniofacial dysjunction. Palatal fractures, though less common, may accompany Le Fort patterns and complicate management. Elderly patients with such injuries often require treatment modifications due to osteoporosis, decreased healing capacity, and systemic comorbidities [1,2]. We report a geriatric patient with combined Le Fort I, Le Fort II, and palatal fractures successfully managed with closed reduction and suspension wiring.

II. CASE PRESENTATION

A 68-year-old male presented following a self-fall at his residence, sustaining facial injuries. Initial care was given at a local hospital, followed by tertiary referral. The patient reported transient loss of consciousness (10 minutes), nasal and oral bleeding, but denied vomiting or seizures. Past medical history included 10 years of hypertension and diabetes mellitus on regular medication. No known drug allergies.

Examination revealed facial asymmetry, multiple abrasions, sutured laceration over the left eyebrow, circumorbital edema, and subconjunctival hemorrhage in the left eye (Fig 1). Intraorally, occlusion was deranged with anterior open bite, circumferential wiring between teeth 12 and 13, mobility of the palate (13–27) with necrotic palatal bone and vestibular tenderness on the left maxilla. (Figure 2, 3)

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Fig 1 Pre Op Front profile of the Patient Showing Sutured Lacerated Wound on Left Side

Fig 2 Pre Op Intraoral Image Showing Deranged Occlusion, Anterior Open Bite, Circumferential Wiring Between Teeth 12 and 13

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Fig 3 Image of the Hard Palate Showing Necrotic Palatal Bone

CT scan findings included: displaced left lateral orbital wall fracture, nasal bone fracture, bilateral infraorbital rim fractures, posterolateral maxillary sinus fractures, palatal fracture, fracture line from frontonasal suture downwards over infraorbital rims to left zygomatic buttress and right zygoma, left zygomatic arch fracture, and left frontozygomatic fracture. (Figure 4, 5, 6)

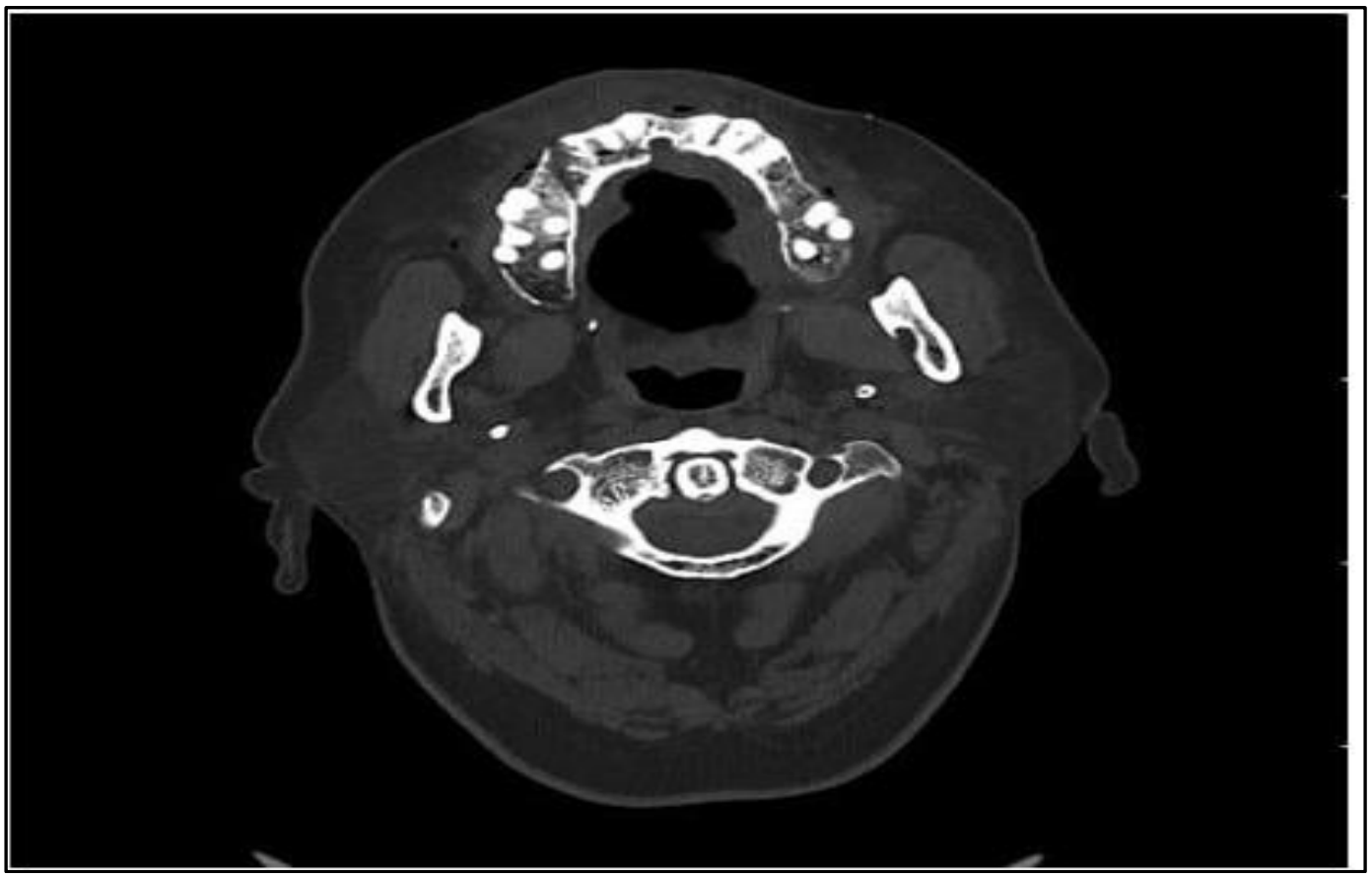

Fig 4 CT Image (Axial Cut) Showing Right Palatal Bone Facture

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Fig 5 CT Imange (Axial Cut) Showing Displaced Left Lateral Orbital Wall Facture, Nasal Bone Facture, Bilateral Infraorbital Rim Facture, Postrolateral Maxillary Sinus Facture

Fig 6 3D CT Image Showing Comminuted Lefort Facture

Final diagnosis: Comminuted fracture of maxilla (Right Le Fort I fracture, left Le Fort II fracture) involving inferior orbital rim, and right palatal bone fracture (Hendrickson type II).

Given the patient's advanced age, associated comorbidities, and the comminuted nature of the fracture a closed reduction with central-frontal suspension wiring was planned. Under general anesthesia, necrotic alveolar bone was removed, a good soft tissue closure was obtained. A 2×8 mm screw was placed in the glabellar region; suspension wires were passed to the maxilla using bone awl. A palatal splint was carefully adapted over the maxillary soft tissues, and the suspension wires were secured to the splint, thereby

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providing stabilization and support. Incisions were closed with 3-0 Vicryl and 3-0 Prolene (Figure 7, 8, 9).

Fig 7 Intraoperative Images Showing Removal of Necrotic Palatal Bone

Fig 8 Intraoperative Image Showing Placement of 2*8mm Screw in Glabellar Region for Suspension Wiring

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Fig 9 Intraopereative Images Showing Placemnet of Palatal Splint for Stabilization and Support

The patient was discharged on postoperative day 10. Suspension and splint removal were performed at 4 weeks. The patient declined prosthetic rehabilitation a palatal splint was provided to cover the defect. No nasal communication was observed at 3-month follow-up. (Figure 10, 11)

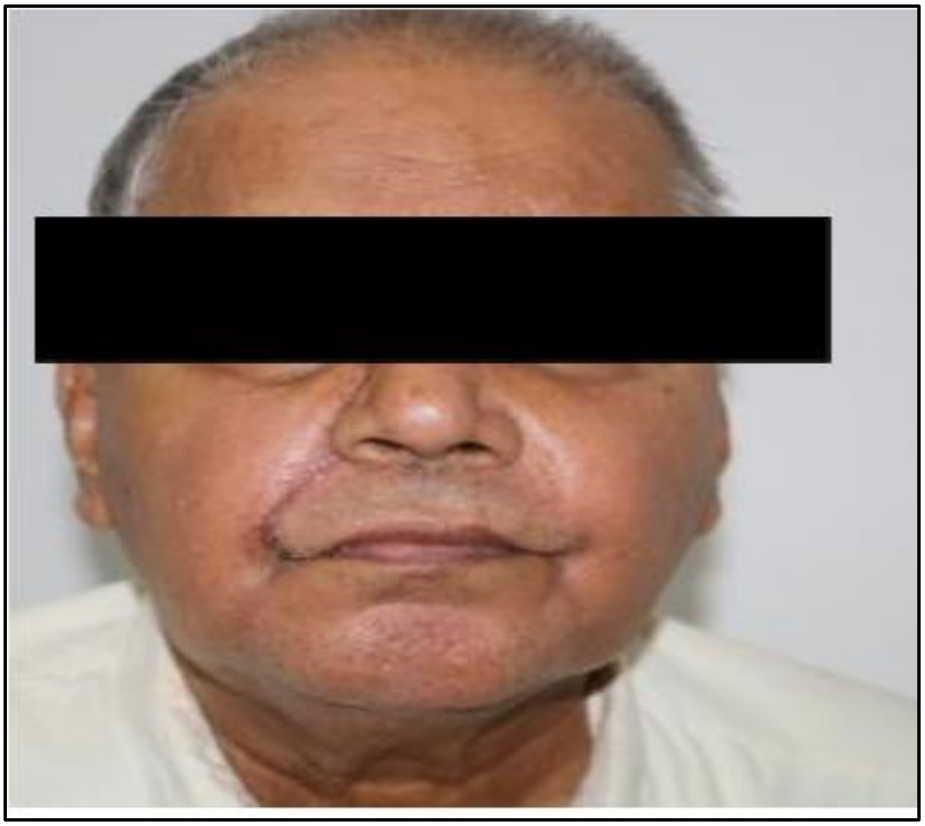

Fig 10 Post Op Front Profile of the Paitent

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Fig 11 Post Op PA View Xray Showing Central Frontal Suspension

III. DISCUSSION

Midfacial fractures in elderly patients are relatively uncommon but present significant management challenges due to comorbidities and bone fragility [3,4]. In our case, closed reduction with suspension wiring minimized surgical trauma while achieving satisfactory stabilization. Palatal fractures, particularly Hendrickson type II sagittal splits, require stabilization to restore occlusion and prevent segmental collapse [5].

Review of literature indicates that palatal fractures are frequently associated with Le Fort I fractures [6], and management varies from palatal splinting to open reduction and internal fixation (ORIF) depending on fracture stability. In a large series, Hendrickson et al. proposed a classification system still widely used [5]. Rowe and Killey's review of 162 palatal fractures found that transverse fractures often necessitate additional palatal stabilization

Case reports and series highlight that in elderly patients, minimally invasive fixation or splinting can yield functional outcomes comparable to ORIF when fracture segments can be adequately reduced. Examples include successful palatal splinting in sagittal fractures [7], and geriatric Le Fort I fractures following low- energy falls where suspension wiring was preferred to avoid extensive dissection [8].

Our case aligns with these findings, as closed reduction and suspension wiring achieved stability without exposing the patient to the higher morbidity of plate fixation. Literature consensus suggests tailoring fixation strategy to patient factors, fracture stability, and risk profile [9,10]

IV. CONCLUSION: WHY SHOULD AN ORAL AND MAXILLOFACIAL SURGEON BE AWARE OF THIS?

This case demonstrates that in elderly patients with complex midfacial fractures, individualized treatment planning is rucial. Minimally invasive stabilization with suspension wiring can provide satisfactory functional and aesthetic recovery while inimizing perioperative risk.

CONSENT

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

FUNDING

No funding was received for this study.

DECLARATION OF COMPETING INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY

No additional data was used for this report.

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