ORIGINAL RESEARCH PAPER

Orthopaedics

PUBIC SYMPHYSIS DIASTASIS TREATED WITH ANTERIOR SUBCUTANEOUS INTERNAL PELVIC FIXATOR A CASE REPORT

KEY WORDS: Infix, pelvic ring injuries, pubic diastasis.

Dr. P. Manoj Prabhakar Post graduate Dept. Of Orthopaedics, Meenakshi Medical College, Enathur, Kanchipuram. 631552

Prof. Dr. P. Sankaralingam* Prof and HOD Dept. Of Orthopaedics, Meenakshi Medical College, Enathur, Kanchipuram. 631552 *Corresponding Author

ABSTRACT

This is a new method of treatment for Pubic Symphysis diastasis with anterior subcutaneous pelvic internal fixation (later called as INFIX) using pedicle screws and a spinal rod. Pedicle screw and Spinal rod was used to address shortcomings of external fixation (EXFIX). Pedicle screws were passed into AIIS through small incision. Contoured Spinal rod of suitable length passed across the lower abdominal wall in subcutaneous plane, compression achieved manually and rod connected to screws and tightened. Patient is able to tolerate implants and is able to sit, stand and walk without difficulty. Complications include lateral femoral cutaneous nerve irritation, which resolved after 5weeks. Appearance of INFIX provides a new alternative treatment; INFIX is minimally invasive and time-saving for treatment of anterior pelvic ring injuries. The EXFIX is an effective tool for anterior ring fixation and has been widely used. However, it is associated with many complications such as pin-track infection, aseptic loosening and loss of reduction. INFIX is less disabling for treatment of Pubic Symphysis Diastasis.

INTRODUCTION

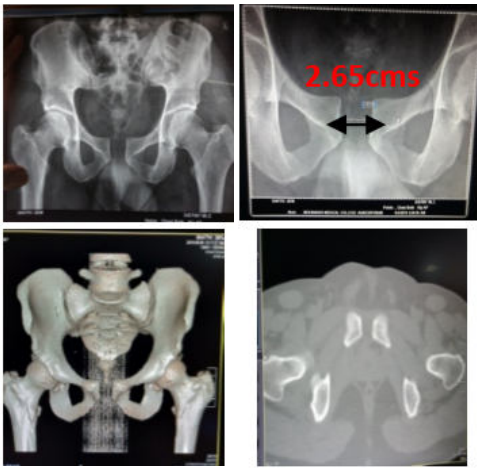
Diastasis of the pubic symphyseal joint has been reported to occur in 13 - 16% of pelvic ring injuries and it typically follows a very high velocity force with predominant external rotatory vector trying to split open one or both the hemipelvis.

An epidemiologic study[1*] conducted over a 10-year period showed that the predominant age group affected was 18- to 44-year olds with an overall mean age of 40

CASE REPORT

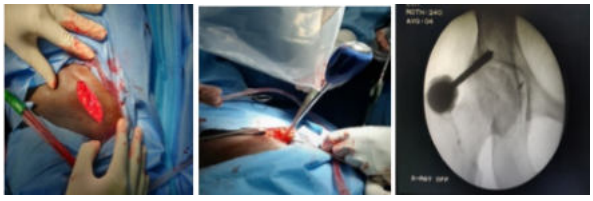
A 28year old male brought to casualty with alleged h/o RTA (Two wheeler VS Two Wheeler).
C/o pain over both hip and suprapubic region,
C/o numbness over Groin,
C/o difficulty in standing and walking.
No H/o bowel and bladder disturbances.
No H/o suggesting head injuries

Examination Of Hip:
No deformity, Both Anterior superior iliac Spine at the same level.
No Scars, sinuses, or discoloration.
No limb length discrepancy. No swelling, No warmth,
Tenderness present over Pubic Symphysis and groin region.
Pelvic Compression Test- Positive,
Pelvic Distraction Test- Positive,
Active and Passive Range of movements painfully restricted
Pre-op Images:



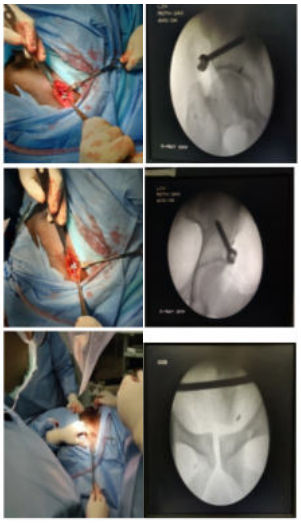
Diagnosis: Pubic Symphysis Diastasis (APC-II)
Plan: Anterior Subcutaneous Internal Pelvic Fixator

Procedure:
A 2–3 cm oblique incision made over anterior inferior iliac spine (AIIS) as center and the subcutaneous tissues are bluntly dissected. The anterior inferior iliac spine is palpated through the incision. Retractors used to protect soft tissue. An entry point created using awl between medial and lateral bony plates of Ilium.

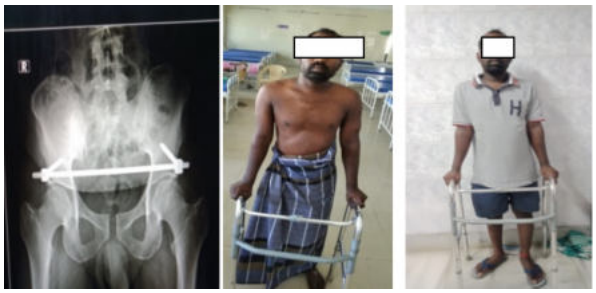


Polyaxial pedicle screw (6.5-mm diameter, 55-mm long) inserted under c-arm guidance. Same procedure performed on contra lateral side. Precontoured spinal rod (5.5-mm diameter) was inserted via subcutaneous plane to connect bilateral pedicle screws. The rod passed just under skin along bikini line and construct compressed manually, rod is tightened while being monitored with fluoroscopy.

Intra op images:

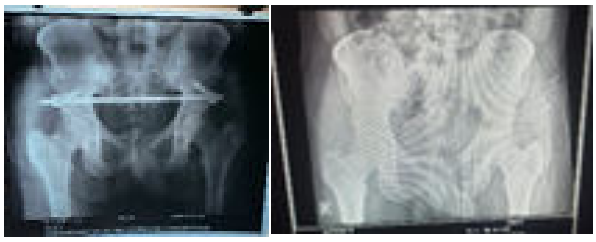


Post op xray:



POD-4 **POD-21**

Implant exit was done after one and half years, due to covid pandemic.



Pre-op **Post-op**

DISCUSSION:

This Internal fixator is less cumbersome than External Fixator. This allows early mobilisation.

Patient has more comfort in activities of daily living
The use of the internal external fixator as initially reported by Vaidya et al[2*], termed INFIX, which adapted spinal instrumentation to the pelvis (off-label use).

Indications for INFIX

- Unstable Pelvic ring Injury (APC-II)
- Anterior pelvic ring injury along with pelvic organ injuries.
- Conversion from "temporary external fixation" in unstable patients to more definitive fixation.
- Pain and inability to mobilize after failed conservative management.

Advantages of Infix over Exfix:

- No limitations in Activities of daily living such as sitting, lying in lateral position, rolling over.
- Ease of mobilisation and early mobilisation.
- Decreased chance of perforation of inner or outer table.
- No Pin track infections or Skin impingement due to construct.
- Decreased incidence of aseptic loosening of construct.
- Decreased blood loss (intra-op compared to plating)[3*].

CONCLUSIONS

Anterior internal pelvic fixator is a novel and less demanding procedure for pelvic ring injuries. With early mobilisation and without hindrance in day to day activities.

REFERENCES:

1 Yoshihara H, Yoneoka D. Demographic epidemiology of unstable pelvic fracture in the United States from 2000 to 2009: trends and in-hospital mortality. *J Trauma Acute Care Surg*. 2014;76(2):380–385
2 Vaidya R, Colen R, Vigdorchik J, et al. Treatment of unstable pelvic ring injuries with an internal anterior fixator and posterior fixation: Initial clinical series. *J Orthop Trauma*. 2012;26(1):1–8.
3 Yin, Y., Luo, J., Zhang, R. *et al.* Anterior subcutaneous internal fixator (INFIX) versus plate fixation for pelvic anterior ring fracture. *Sci Rep* **9,** 2578 (2019) doi:10.1038/s41598-019-39068-7