

ACUTE FLAT BONE FRACTURES

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Abstract: Fractures of the pelvic bones include fractures of the pubic symphysis, innominate bones, acetabulum, sacroiliac joint, and sacrum. They range from minimally displaced stable injuries caused by low-energy falls to significantly displaced and unstable injuries that may be accompanied by extensive hemorrhage. Injuries to the genitourinary system, intestinal and nervous systems are also possible. The diagnosis is established by plain radiography and conventional CT. For mild, stable fractures, only symptomatic treatment is required. Unstable fractures and fractures with significant bleeding usually require treatment with external fixation or open reduction with internal fixation.

Keywords: Fracture, injury, treatment, method, diagnosis.

INTRODUCTION

The pelvic bones form a ring with the anterior and posterior sacroiliac ligaments and fibrous joints between the bones (syndesmoses). If the pelvic bones are fractured, the ring may be damaged, but not always; Ring damage occurs with ≥ 2 fractures and is manifested by their instability.

MATERIALS AND METHODS

The pelvic cavity contains many important anatomical structures that are often damaged. Vascular injuries (eg, iliac vein) may occur and may cause severe bleeding, especially in posterior pelvic injuries. Hemorrhage may be external (indicating an open fracture) or only internal; in both cases, hemorrhagic shock may develop.

Combined urogenital injuries (for example, rupture of the urethra and bladder) are typical, especially with fractures of the anterior pelvis. It is possible, especially with fractures of the posterior pelvis, damage to the intestine. With posterior fractures, nerve roots and plexuses near the sacral foramina may be damaged.

RESULTS AND DISCUSSION

Etiology of pelvic fractures

Most pelvic fractures are caused by high-energy trauma, most often from road traffic accidents (including pedestrian collisions) or falls from height. Sometimes (for example, with fractures of the symphysis or rami of the pubis), fractures occur with minimal or low-energy trauma (for example, a fall at home), especially in the setting of osteoporosis.

Some pelvic fractures, usually in adolescents with exposed growth plates, are small avulsion fractures of the anterior or inferior iliac spine or ischial tuberosity.

Complex classification systems have been proposed based on the mechanism, location and/or degree of stability of damage.

In most cases, pelvic fractures present with pain in the groin and/or lower back. Usually, especially with severe fractures, they manifest themselves as pain with simultaneous pressure on the pubic symphysis and both anterior superior iliac spines; this symptom may indicate fracture instability.

Depending on the severity of the fracture, the ability to walk may be impaired.

Signs of damage to the genitourinary and/or female reproductive systems (usually the vagina) include:

- Blood in the urethra
- Hematoma in the scrotum or perineum
- Hematuria
- Anuria
- High location and inability to palpate the prostate

- Vaginal bleeding

Damage to the intestine or rectum can lead to:

- Pain in the abdomen or pelvic area
- Rectal bleeding
- Subsequent development of peritonitis

Neurological injuries can cause:

- Weakness or loss of sensation and reflexes in the lower extremities, rectum, perineum
- Incontinence
- Urinary retention

Mortality is high when the fracture is unstable or posteriorly localized, or when complicated by hemorrhagic shock.

- Diagnosis of pelvic fractures
- Radiography
- Usually CT scan without contrast

Pelvic fractures should be excluded if there is pain in the pelvis or hip, or if there is massive trauma. X-ray of the pelvis in the anteroposterior projection reveals most fractures.

A displaced fracture means that the integrity of the pelvic ring is compromised, and another fracture or lesion of the syndesmosis or ligamentous apparatus may be suspected. X-rays in specialized projections may be necessary (for example, a Judet oblique radiograph allows visualization of the acetabulum).

CT is more sensitive than radiography and is typically performed to identify all fracture fragments and certain associated injuries in fractures due to high-energy trauma. CT is often not necessary for isolated pubic ramus fractures due to low-energy trauma or small avulsion fractures.

Diagnosis and treatment of associated injuries is more important than a complete identification of a pelvic fracture. It is necessary to conduct an examination and assess the severity of injuries to the bladder and urethra. Examinations include:

- Urinalysis to detect hematuria
- Neurological examination
- Gynecological examination in women to rule out vaginal trauma
- If indicated, retrograde urethrography is performed to check for urethral trauma.

CONCLUSION

If you have an unstable pelvic fracture, you need to apply a cast (for example, with a drape) or use an external fixator as soon as possible to stabilize it.

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