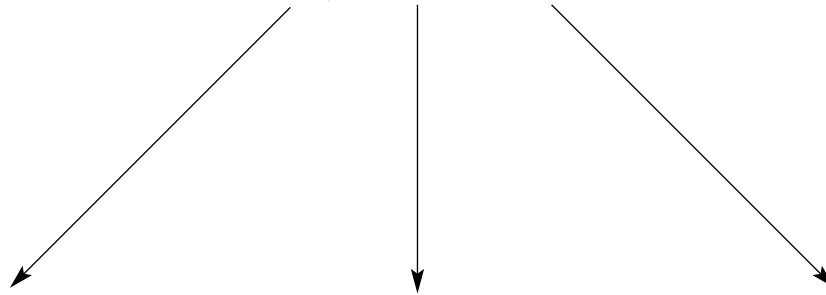


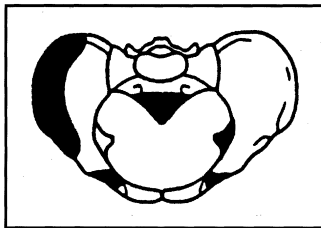
BONE: PELVIS (6)

Location: Pelvic ring (61)

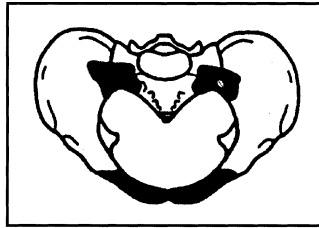


Types:

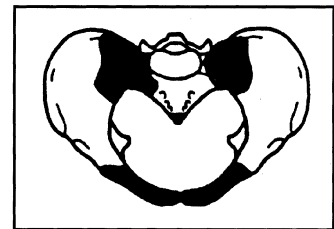
A. Lesion sparing (or with no displacement of) posterior arch (61-A)



B. Incomplete disruption of posterior arch, partially stable (61-B)



C. Complete disruption of posterior arch, unstable (61-C)



The classification of pelvic ring and acetabular fractures is based on the work of Pennal and Tile and Judet and Letournel. This classification was developed to accommodate the alpha-numeric system of The Comprehensive Long Bone System.

DEFINITIONS

Pelvic ring has two arches: (a) posterior arch is behind acetabular surface and includes sacrum, sacroiliac joints and their ligaments and posterior ilium, and (b) anterior arch is in front of acetabular surface and includes pubic rami bone and symphyseal joint.

Anterior column of acetabulum extends from the anterior half of the iliac crest to the pubis (iliopubic).

Posterior column of acetabulum extends from the greater sciatic notch to the ischium (ilioischial).

Unilateral: only 1 hemipelvis involved posteriorly.

Bilateral: both hemipelvis involved posteriorly.

Contralateral: the side opposite the major posterior lesion.

Ipsilateral: the side of the more severe lesion.

Stable: lesion sparing the posterior arch; pelvic floor intact and able to withstand normal physiological stresses without displacement.

Partially stable: posterior osteoligamentous integrity partially maintained and pelvic floor intact.

Unstable: complete loss of posterior osteoligamentous integrity; pelvic floor disrupted.

Where appropriate, the Young-Burgess classification has been added to the Subgroup and Qualification section. Although these terms are not part of the alpha-numeric code, they are added so that those using this classification can easily code into the alpha-numeric system for documentation. The following are the definitions of the Young-Burgess System:

APC: anterior-posterior compression; LC: lateral compression; SI: sacroiliac; VS: vertical shear; CMI: combined mechanical instability.

ACKNOWLEDGEMENTS

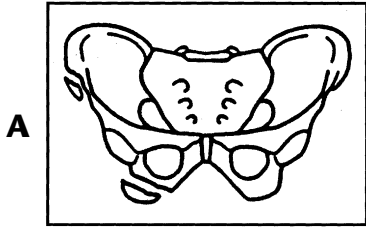
The O.T.A. Coding and Classification Committee gratefully acknowledges the following individuals for their significant contributions to the development of systematic universal pelvic and acetabular classifications:

Emile Letournel, MD; Marvin Tile, MD; Balz Isler, MD; David Helfet, MD; Serge Nazarian, MD

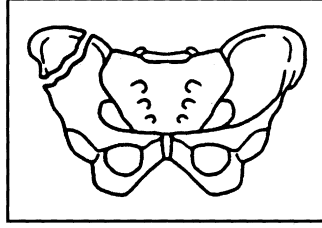
Groups:

Pelvis, ring, stable (61-A)

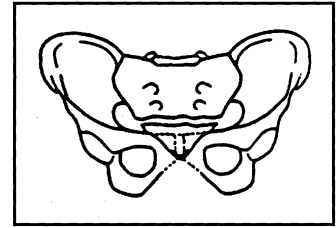
1. Fracture of innominate bone, avulsion (61-A1)



2. Fracture of innominate bone, direct blow (61-A2)

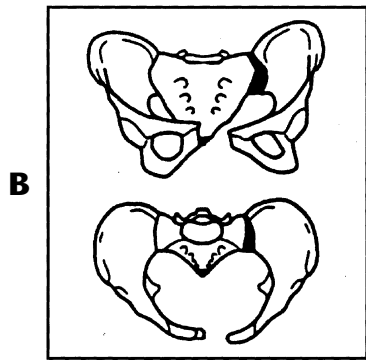


3. Transverse fracture of sacrum and coccyx (61-A3)

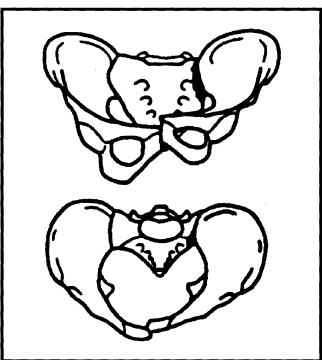


Pelvis, ring, partially stable (61-B)

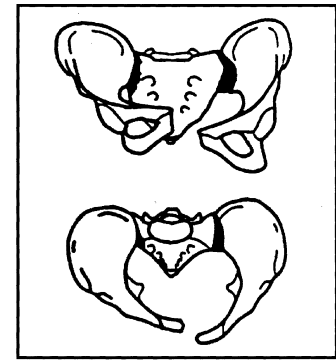
1. Unilateral, partial disruption of posterior arch, external rotation ("open-book" injury) (61-B1)



2. Unilateral, partial disruption of posterior arch, internal rotation (lateral compression injury) (61-B2)

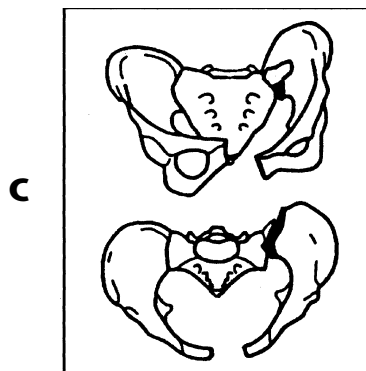


3. Bilateral, partial lesion of posterior arch (61-B3)

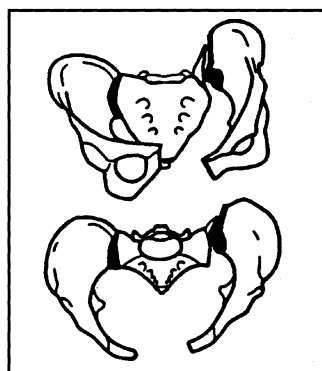


Pelvis, ring, complete disruption of posterior arch unstable (61-C)

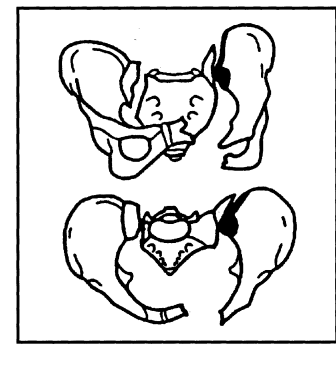
1. Unilateral, complete disruption of posterior arch (61-C1)



2. Bilateral, ipsilateral complete, contralateral incomplete (61-C2)



3. Bilateral, complete disruption (61-C3)



Subgroups and Qualifications:

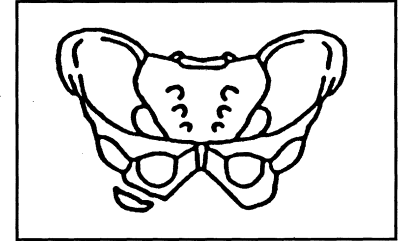
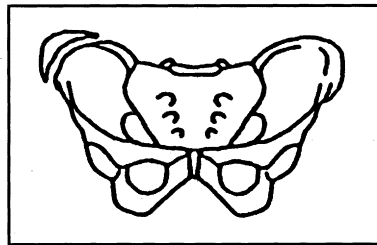
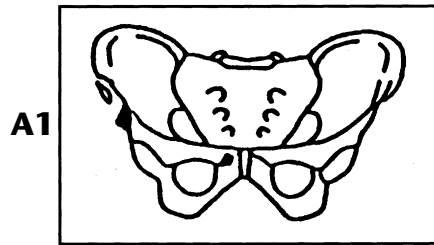
Pelvis, ring, stable, avulsion of innominate bone (61-A1)

1. Iliac spine (61-A1.1)

- (1) anterior superior
- (2) anterior inferior
- (3) pubic spine

2. Iliac crest (61-A1.2)

3. Ischial tuberosity (61-A1.3)



Pelvis, ring, stable, innominate bone, direct blow (61-A2)

1. Iliac wing (61-A2.1)

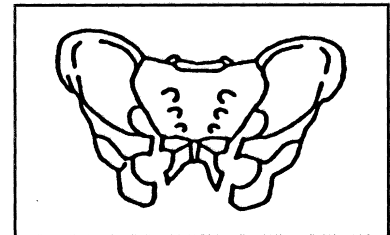
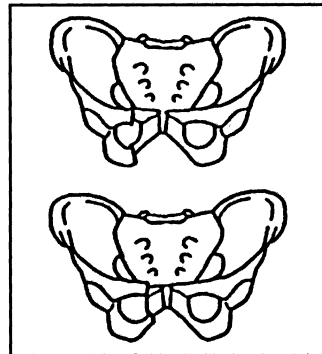
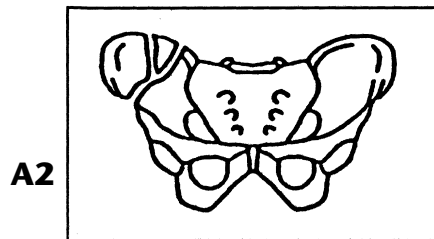
- (1) 1 fragment
- (2) more than 1 fragment

2. Unilateral fracture of anterior arch (61-A2.2)

- (1) through pubic bone/rami
- (2) through pubic bone involving symphysis pubis

3. Bifocal fracture of anterior arch (61-A2.3)

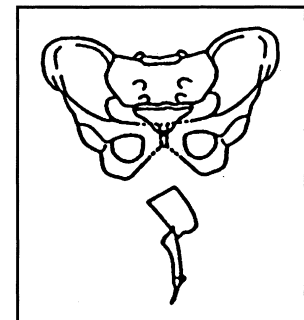
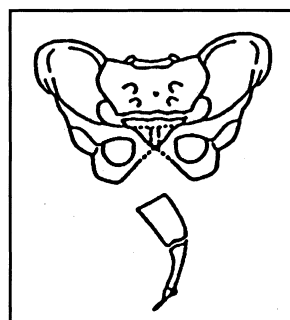
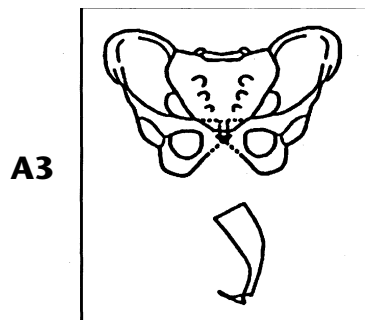
- (1) bilateral pubic rami
- (2) pubic rami on 1 side and symphysis pubis



Pelvis, ring, stable, transverse fracture of sacrum and coccyx (61-A3)

1. Sacrococcygeal dislocation (61-A3.1) **2. Sacrum undisplaced (61-A3.2)**

3. Sacrum displaced (61-A3.3)

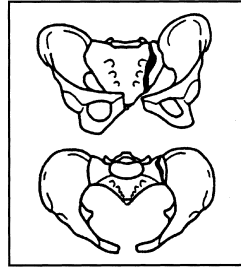
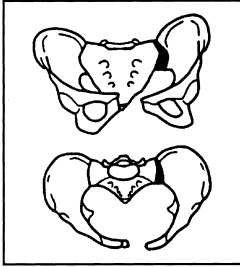


Pelvis, ring, partially stable, unilateral, external rotation (open book, APC-II) (61-B1)

- (1) ipsilateral
- (2) contralateral
- (3) anterior lesion

- 1. Sacroiliac joint anterior disruption (61-B1.1)
- 2. Sacral fracture (61-B1.2, c*)

B1



Pelvis, ring, partially stable, unilateral, internal rotation (lateral compression) (61-B2)

1. Anterior compression fracture of sacrum (LC-I) (61-B2.1)

- (1) anterior lesion ipsilateral
- (2) anterior lesion contralateral (bucket handle)

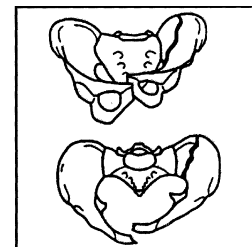
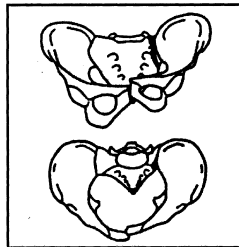
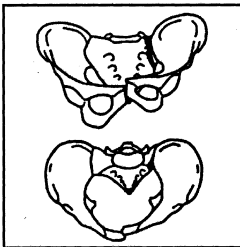
2. Partial sacroiliac joint fracture/subluxation (LC-II) (61-B2.2)

- (1) anterior lesion ipsilateral
- (2) anterior lesion contralateral (bucket handle)

3. Incomplete posterior iliac fracture (LC-II) (61-B2.3)

- (1) anterior lesion ipsilateral
- (2) anterior lesion contralateral (bucket handle)

B2



Pelvis, ring, partially stable, bilateral (61-B3)

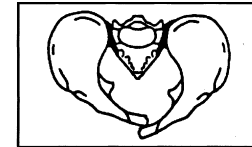
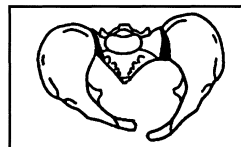
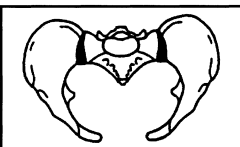
1. Bilateral B1 (open book, external rotation) (APC-II) (61-B3.1)

- (1) bilateral sacroiliac joint anterior disruption
- (2) bilateral sacral fracture
- (3) unilateral partial SI joint disruption/contralateral sacral fracture (c*)

2. B1 and B2 (LC-III) (61-B3.2, a*, b**, c*)

3. Bilateral B2 (61-B3.3, a*, b**, c*)

B3



Pelvis, ring, complete disruption, unilateral (APC-III) (61-C1)

1. Through ilium (61-C1.1, c*)

2. Through sacroiliac joint (61-C1.2, c*)

3. Through the sacrum (61-C1.3, c*)

(a¹) transiliac fracture dislocation

(a²) pure dislocation

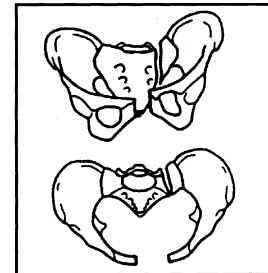
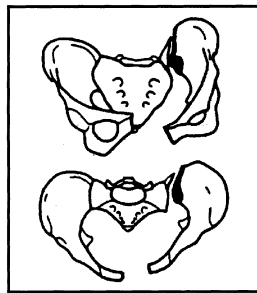
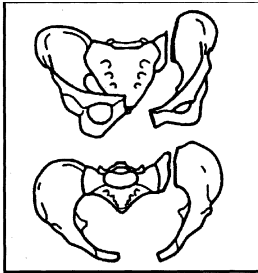
(a³) transsacral fracture dislocation

(a¹) lateral (ala)

(a²) foraminal

(a³) medial to foramen

C1



Pelvis, ring, unstable, bilateral, ipsilateral complete, contralateral incomplete (LC-III) (61-C2)

1. Complete through ilium (61-C2.1, b*, c*)

2. Complete through sacroiliac joint (61-C2.2, b*, c*)

3. Complete through the sacrum (61-C2.3, b*, c*)

(a¹) transiliac fracture dislocation

(a²) pure dislocation

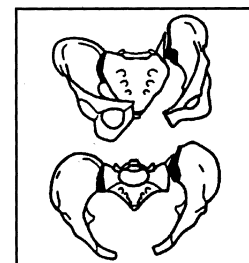
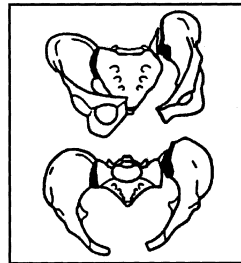
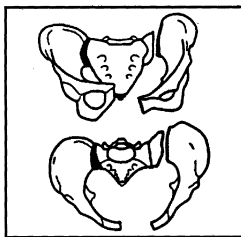
(a³) transsacral fracture dislocation

(a¹) lateral (ala)

(a²) foraminal

(a³) medial to foramen

C2



Pelvis, ring, unstable, bilateral (APC-III) (61-C3, b***, c*)

1. Extrasacral on both sides (61-C3.1)
(a¹) ilium; (a²) SI joint, transiliac fracture/dislocation; (a³) SI joint, transsacral fracture/dislocation; (a⁴) SI joint dislocation

2. Sacral one side, extra sacral other side (61-C3.2, b*, c*)**

(a¹) sacral ala; (a²) sacral foraminal;

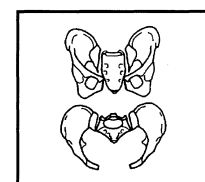
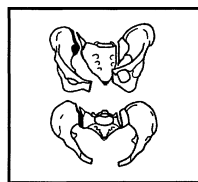
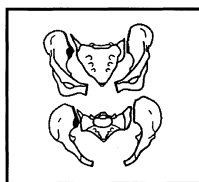
(a³) sacral medial to foramen

3. Sacral both sides (61-C3.3, c*)

(a) a¹) lateral alar; a²) foraminal; a³) medial

(b) b¹) lateral alar; a²) foraminal; a³) medial

C3



Footnotes:

*a: Ipsilateral posterior pelvic lesion:

a¹) sacroiliac joint anterior disruption; a²) sacral fracture; a³) anterior compression fracture sacrum; a⁴) partial sacroiliac joint fracture/subluxation; a⁵) incomplete posterior iliac fracture.

*b: Contralateral pelvic lesion:

b¹) external rotation, "open book" partial disruption: .1) sacroiliac joint anterior disruption; .2) sacral fracture

b²) internal rotation, "lateral compression" partial disruption: .1) anterior compression fracture of

the sacrum; .2) partial sacroiliac joint fracture/subluxation; .3) incomplete posterior iliac fracture

**b: Contralateral posterior pelvic lesion:

b¹) sacroiliac joint anterior disruption; b²) sacral fracture; b³) anterior compression fracture sacrum; b⁴) partial sacroiliac joint fracture/subluxation; b⁵) incomplete posterior iliac fracture.

***b: Contralateral pelvic lesion:

b¹) ilium; b²) sacroiliac joint, transiliac fracture dislocation; b³) sacroiliac joint, transsacral fracture dislocation; b⁴) sacroiliac joint, pure dislocation.

*c: Anterior pelvic lesion:

c¹) unilateral pubis/rami fracture, ipsilateral: c²) unilateral pubis/rami fracture, contralateral; c³) bilateral pubis/rami fracture; c⁴) symphysis pubis disruption, pure < 2.5 cm; c⁵) symphysis pubis disruption, pure > 2.5 cm; c⁶) symphysis pubis disruption, pure, locked; c⁷) symphysis and ipsilateral pubis/rami fracture (tilt); c⁸) symphysis and contralateral pubis/rami fracture; c⁹) symphysis and bilateral pubis/rami fracture; c¹⁰) no anterior lesion.

BONE: PELVIS (6)

Modifiers to describe articular surfaces:

α¹) femoral head subluxation, anterior; α²) femoral head subluxation, medial; α³) femoral head subluxation, posterior.

§¹) femoral head dislocation, anterior; §²) femoral head dislocation, medial; §³) femoral head dislocation, posterior.

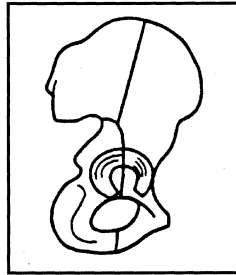
χ¹) acetabular surface, chondral lesion; χ²) acetabular surface, impacted.

δ¹) femoral head, chondral lesion; δ²) femoral head, impacted; δ³) femoral head, osteochondral fracture.

ε¹) intraarticular fragment requiring surgical removal.

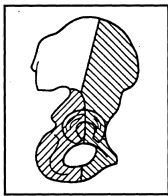
ø¹) nondisplaced fracture of the acetabulum.

Location: Acetabulum (62)

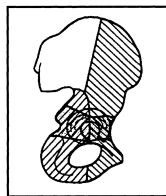


Types:

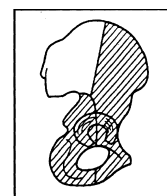
A. Partial articular, 1 column (62-A)



B. Partial articular, transverse (62-B)



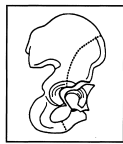
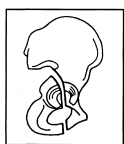
C. Complete articular, both columns (62-C)



Groups:

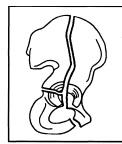
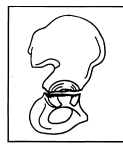
Pelvis, acetabulum, partial articular, one column (62-A)

- 1. Posterior wall (62-A1)
- 2. Posterior column (62-A2)
- 3. Anterior (62-A3)



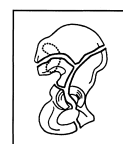
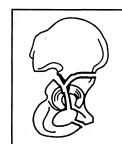
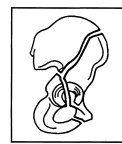
Pelvis, acetabulum, partial articular, transverse (62-B)

- 1. Transverse (62-B1)
- 2. T-shaped (62-B2)
- 3. Anterior column, posterior hemi-transverse (62-B3)



Pelvis, acetabulum, complete articular, both columns (62-C)

- 1. High (62-C1)
- 2. Low (62-C2)
- 3. Involving sacroiliac joint (62-C3)

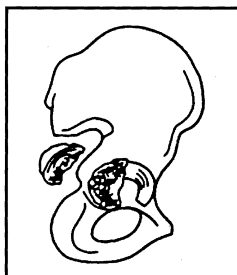


Subgroups and Qualifications:

Pelvis, acetabulum, partial articular, 1 column posterior wall (62-A1)

1. Pure fracture dislocation, 1 fragment (62-A1.1)

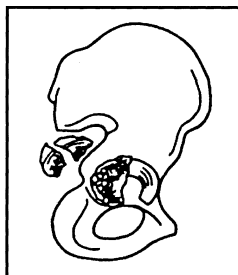
- (1) posterior
- (2) posterior superior
- (3) posterior inferior



A1

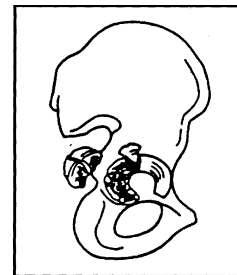
2. Pure fracture dislocation, multifragmentary (62-A1.2, a*)

- (1) posterior
- (2) posterior superior
- (3) posterior inferior



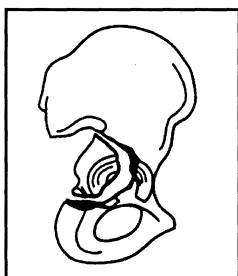
3. Fracture dislocation with marginal impaction (62-A1.3, a*)

- (1) posterior
- (2) posterior superior
- (3) posterior inferior



Pelvis, acetabulum, partial articular, 1 column posterior column (62-A2)

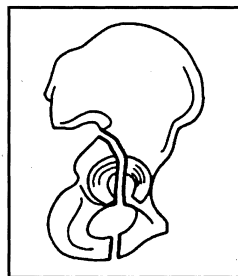
1. Through ischium (62-A2.1)



A2

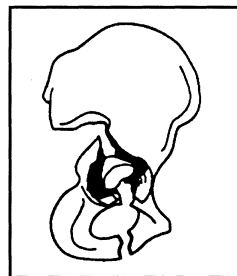
2. Through obturator ring (62-A2.2)

- (1) preserving tear drop
- (2) involving tear drop



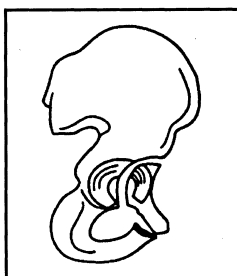
3. Associated with posterior wall (62-A2.3, a*)

- (1) pure fracture dislocation: .1) posterior; .2) posterior superior; .3) posterior inferior
- (2) with marginal impaction: .1) posterior; .2) posterior superior; .3) posterior inferior



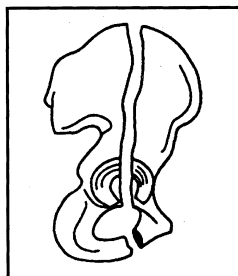
Pelvis, acetabulum, partial articular, one column anterior (62-A3, a**)

1. Anterior wall (62-A3.1)

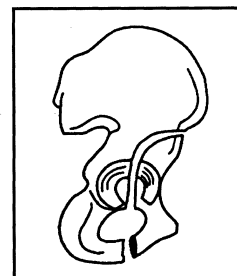


A3

2. Anterior column, high (fracture to iliac crest) (62-A3.2)



3. Low (fracture to anterior border iliac crest) (62-A3.3)



*a: a¹) 1 fragment; a²) 2 fragments; a³) more than 2 fragments.

**a: a¹) anterior column in 1 fragment; a²) anterior column in 2 fragments; a³) anterior column in more than 2 fragments.

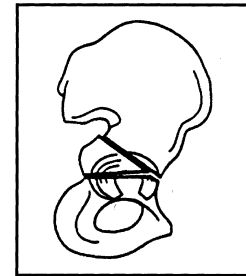
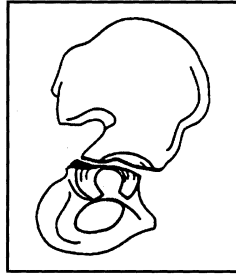
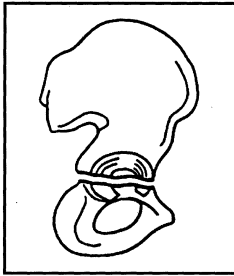
Pelvis, acetabulum, partial articular, transverse (62-B1)

1. **Infratectal** (62-B1.1, a*)

2. **Juxtatectal** (62-B1.2, a*)

3. **Transtectal** (62-B1.3, a*)

B1



Pelvis, acetabulum, partial articular, transverse T-type (62-B2)

1. **Infratectal** (62-B2.1, a*)

2. **Juxtatectal** (62-B2.2, a*)

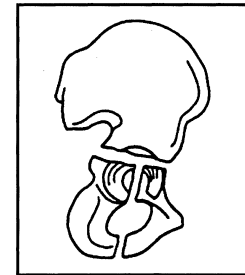
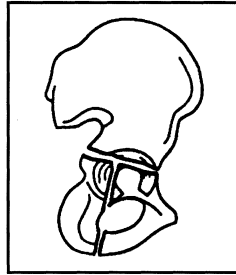
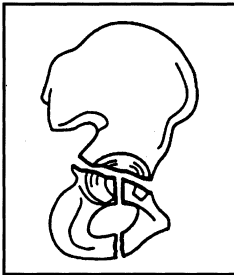
3. **Transtectal** (62-B2.3, a*)

- (1) stem posterior
- (2) stem through obturator foramen
- (3) stem anterior

- (1) stem posterior
- (2) stem through obturator foramen
- (3) stem anterior

- (1) stem posterior
- (2) stem through obturator foramen
- (3) stem anterior

B2



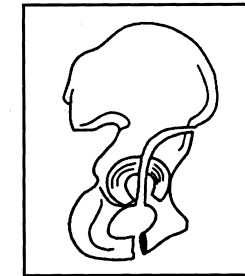
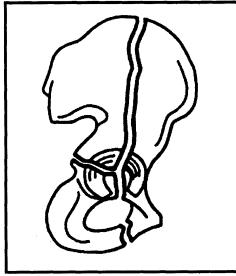
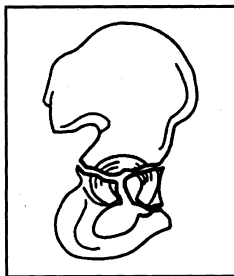
Pelvis, acetabulum, partial articular, transverse posterior hemitransverse, anterior column (62-B3)

1. **Anterior wall** (62-B3.1)

2. **Anterior column high** (62-B3.2, a**)

3. **Anterior column low** (62-B3.3, a**)

B3



*a: a¹) pure transverse; a²) and posterior wall, single fragments; a³) and posterior wall, multifragmentary; a⁴) and posterior wall, multifragmentary with marginal impaction.

**a: a¹) anterior column in 1 fragment; a²) anterior column in 2 fragments; a³) anterior column in more than 2 fragments.

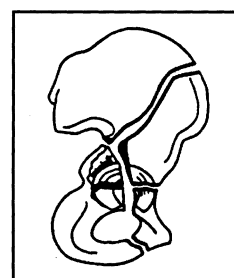
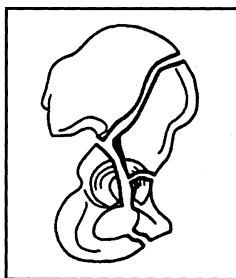
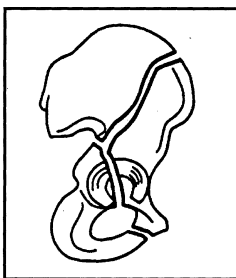
Pelvis, acetabulum, complete, both columns high (62-C1)

1. Each column simple (62-C1.1)

2. Posterior column simple, anterior column multifragmentary (62-C1.2)

3. Posterior column and posterior wall (62-C1.3, a**, b*)

C1



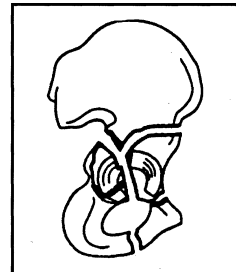
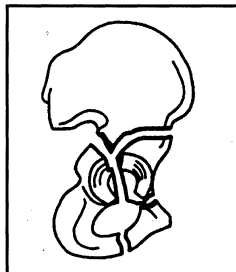
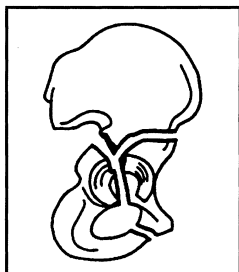
Pelvis, acetabulum, complete articular, both columns low (62-C2)

1. Each column simple (62-C2.1)

2. Posterior column simple, anterior column multifragmentary (62-C2.2)

3. Posterior column and posterior wall (62-C2.3, a**, b*)

C2



Pelvis, acetabulum, complete articular, both columns involving sacroiliac joint (62-C3)

1. Anterior wall (62-C3.1)

(a¹) anterior column simple, high

(a²) anterior column simple, low

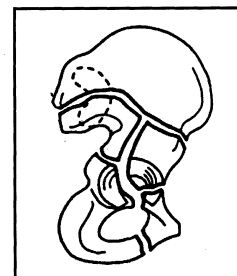
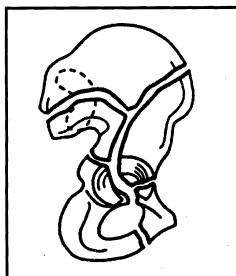
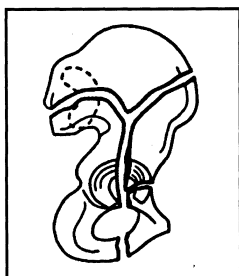
(a³) anterior column multifragmentary, high

(a⁴) anterior column multifragmentary, low

2. Posterior column multifragmentary, anterior column high (62-C3.2, a***, b**)

3. Posterior column multifragmentary, anterior column low (62-C3.3, a***, b**)

C3



**a: a¹) anterior column in 1 fragment; a²) anterior column in 2 fragments; a³) anterior column in more than 2 fragments.

***a: a¹) anterior column simple; a²) anterior column multifragmentary.

*b: b¹) posterior wall, single fragment; b²) posterior wall, multifragmentary without impaction; b³) posterior wall, multifragmentary with marginal impaction.

**b: b¹) pure separation; b²) and posterior wall, single fragment; b³) and posterior wall, multifragmentary without impaction; b⁴) and posterior wall, multifragmentary with marginal impaction.