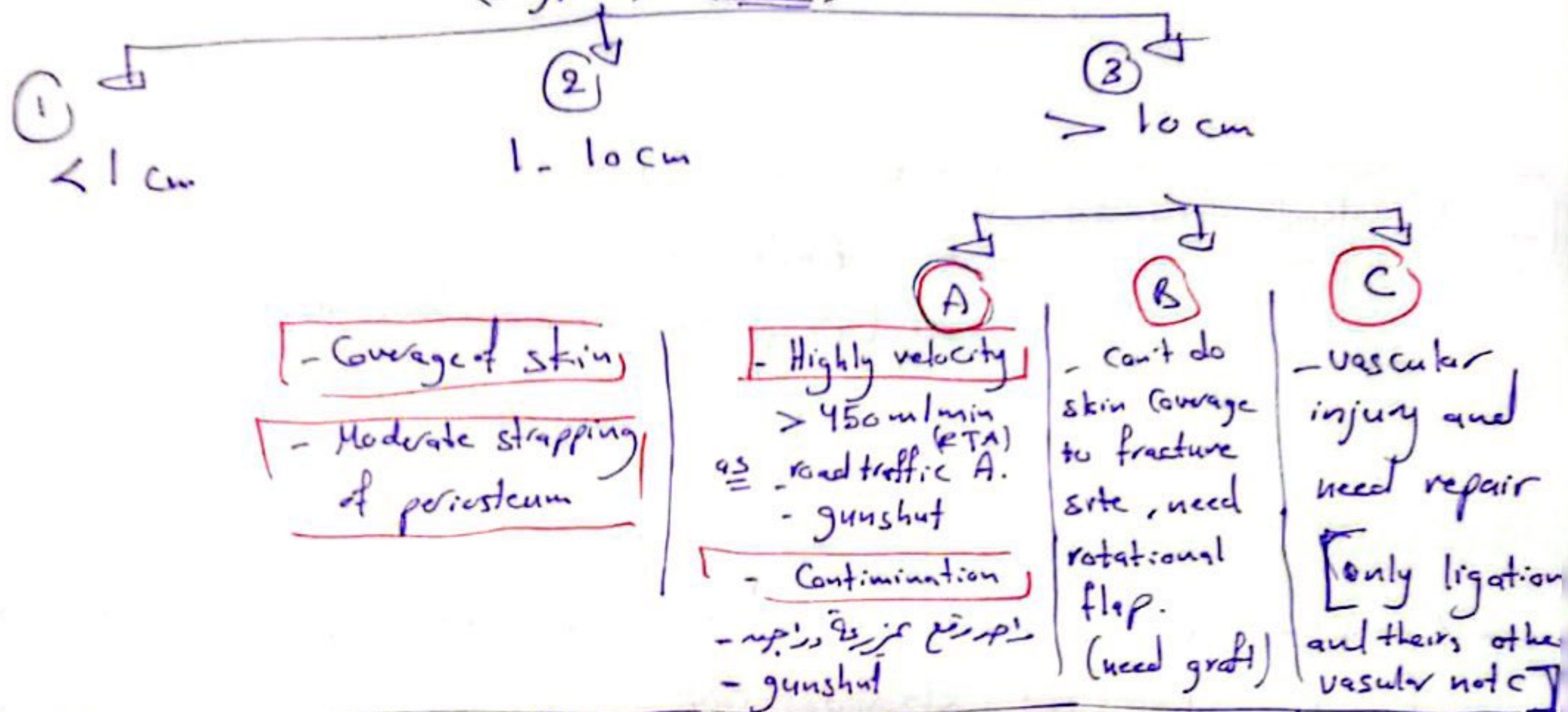


* Fracture of the upper limb /

- Type of fracture
 - open (compound) → There's communication between environmental and hematoma.
 - closed (simple) → away from hematoma
- There's no communication with environment

- Gustilo anderson classification of open fracture:- (3 types) (size)

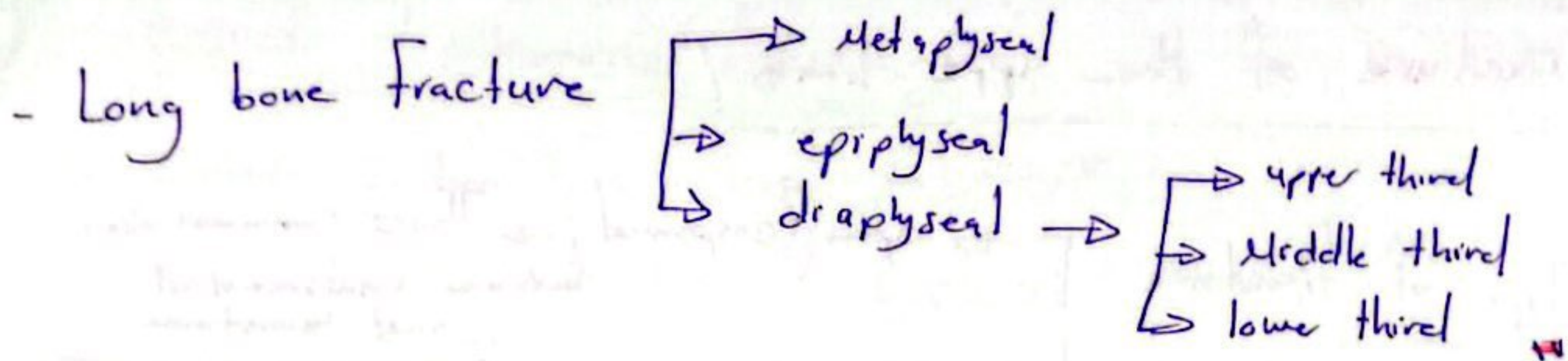


- Gustilo anderson depend on size, soft tissue injury, Stripping of periosteum, Contamination, velocity

- Comminuted fracture → 3 fragment مفكك

* Salter - Harris classification

- ① type ① → epiphyseal separation → تفصل العظام وترجع مكانها
- ② type ② → above
- ③ type ③ → ~~lower~~ L [lower
- type ④ → TE
- type ⑤ → R



- | | |
|-------------------|--------------------------|
| ① → short oblique | ④ → butterfly |
| ② → butterfly | ⑤ → comminuted fracture. |
| ③ → butterfly | |
- 7 types

- Clavicle fracture

```

    graph LR
      A[Clavicle fracture] --> B[Medial third]
      A --> C[Middle third]
      A --> D[Lateral third]
      D --> E[often need surgery]
  
```

due to conjunction with acromioclavicular joint.

- Coracoclavical and coracohumeral ligament impart in stabilization of clavicle and shoulder joint.

- 94% of mid fracture of clavicle treated conservatively.

- treated surgical :-

- | |
|--|
| ① severe displaced. cause convert close fracture to open fracture. |
| ② open fracture ③ vascular injury ④ over 100 stone than 2 cm |
| ⑤ angulation more than 30° ⑥ polytrauma patient. |

- Neers classification to know management and prognosis

- Complication of fracture humerus /

- | | |
|-------------------|--|
| ① Malunion | ④ stiffness (due to over tight of structure in shoulder around shoulder) |
| ② nonunion. | ⑤ sympathetic reflex syndrome (due to immobilization for long time) |
| ③ vascular injury | ⑥ |

Management of humeral fracture /

- ① closed (Indirect) reduction زخم بکسر منبر یا فتح
- ② open (direct) reduction (closed)
↓
(Malunion)
- ③ arthroplasty (مفصل خنثی)
- ④ Intramedullary nail [locked / non locked]
(سنج تو ماله) [بسته / باز]

- ① anatomical neck
- ② surgical neck
- ③ greater tuberosity
- ④ less tuberosity

12 پرس

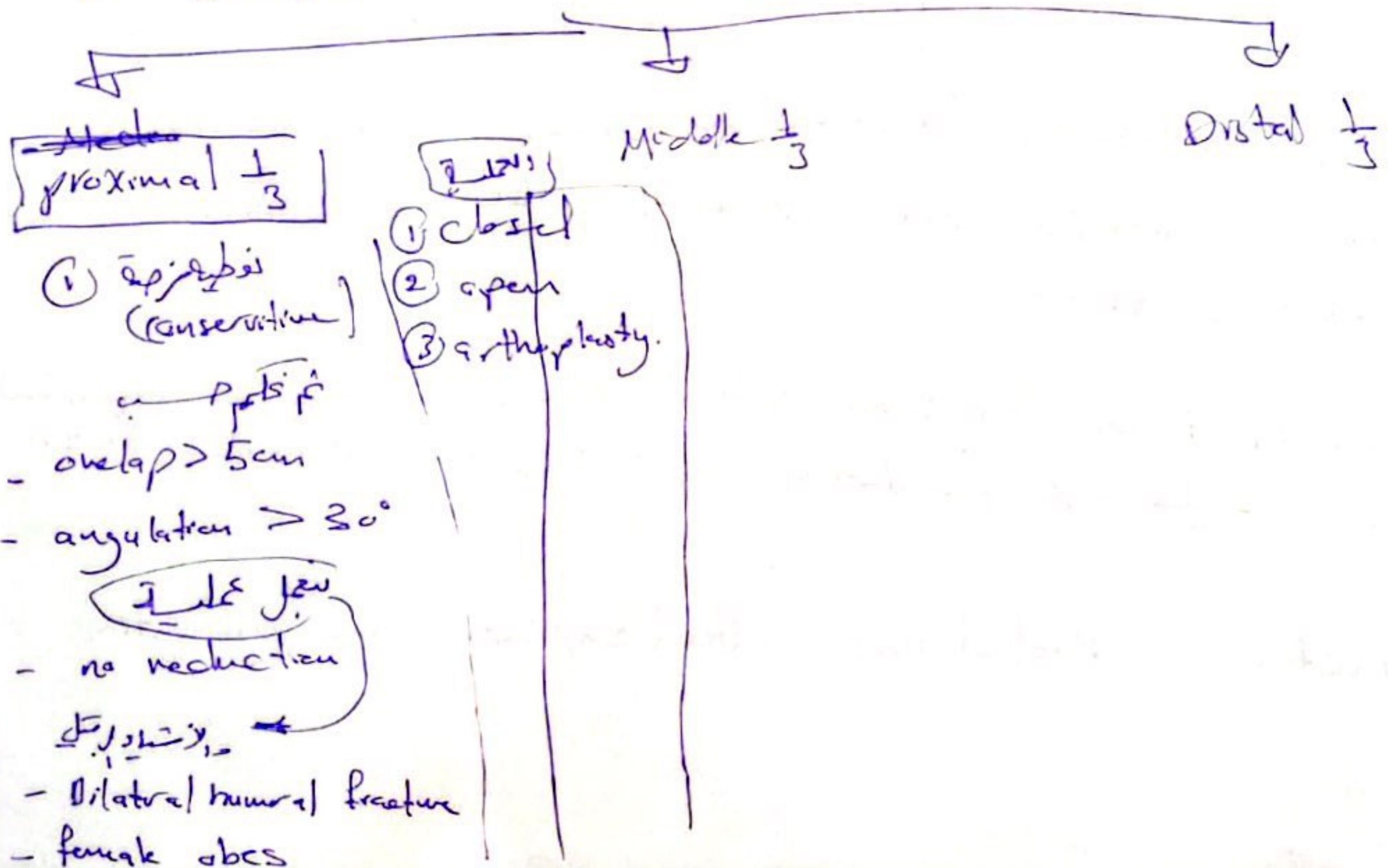
- reverse arthroplasty → in case of rotator cuff muscle tear.

Humeral shaft fracture

↓
classified into

- Displaced
- non Displaced

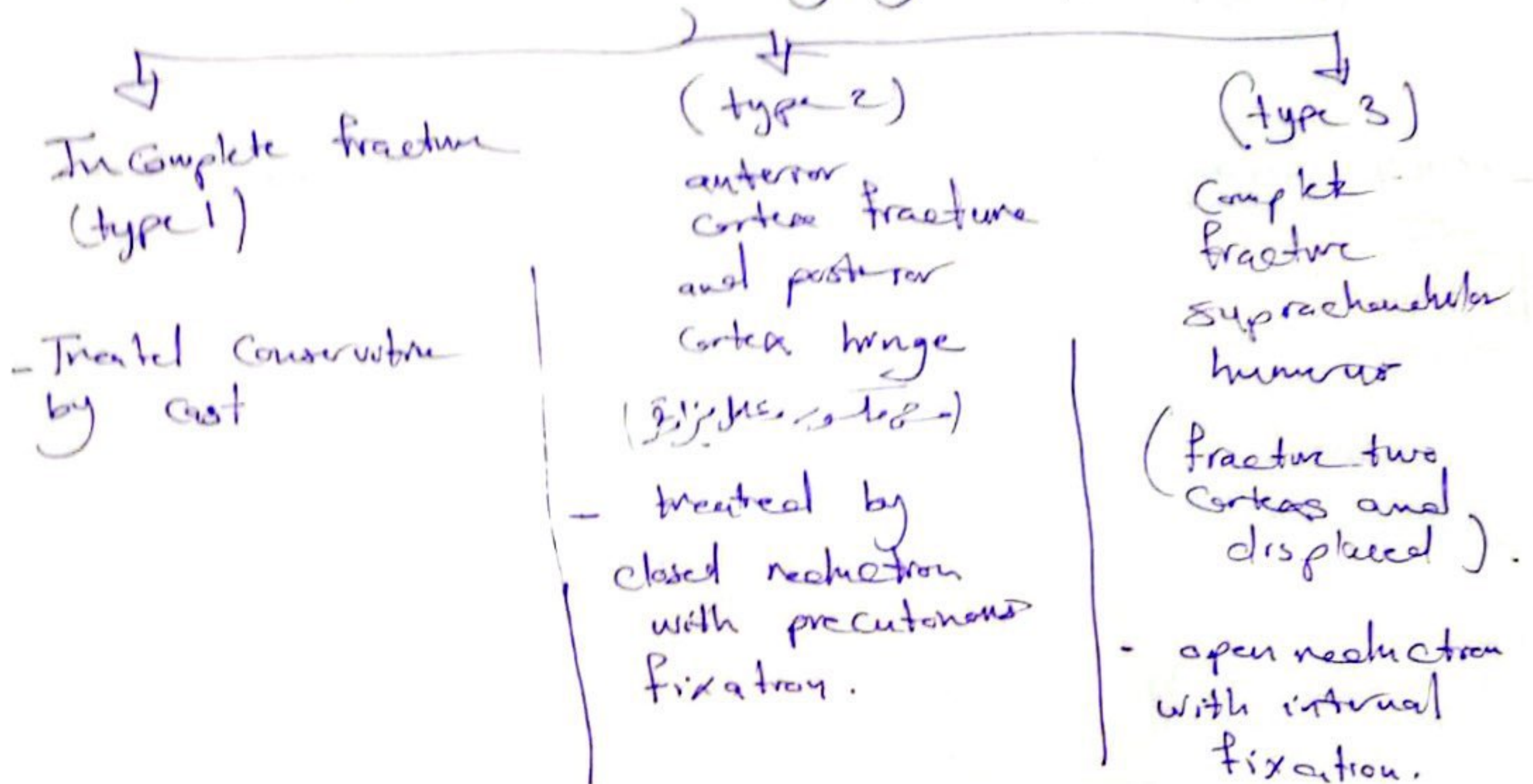
* Classified also into



osteofusion ^{دلت} ~~up~~ lateral epicondyle osteofusion ^{نفر} ~~up~~ -
(16y closure)

- Suprachondular fracture two type
 - Extension (92%)
 - Flexion (2%)

- Extension type classification by Gartland into 3 type

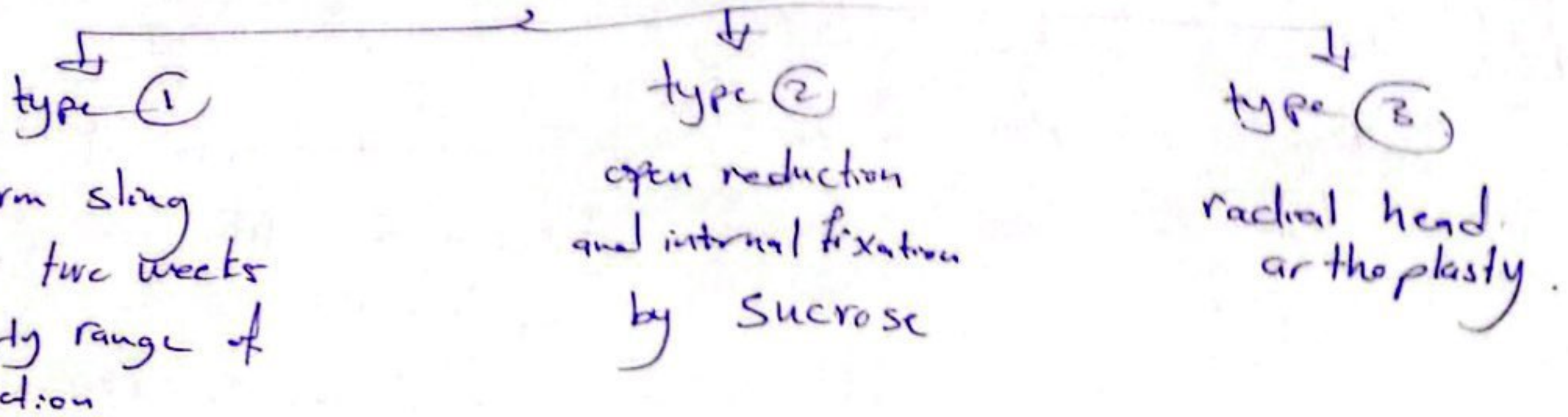


- In suprachondular fracture, we should check the radial and ulna arteries and check the pulse, comparable with contralateral side.

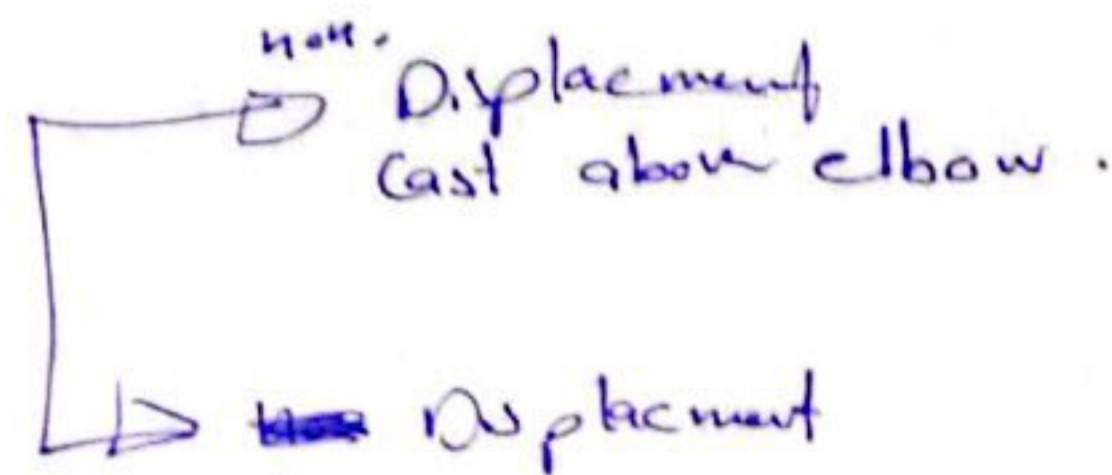
- Don't try to do more than 3 trials closed reduction in suprachond fracture.
علاج دلت - 3 بار تلاش برای کاهش بسته - اگر باز نماند - عملیات باز

- fracture of radial head affect supination and pronation

- Radial head fracture treatment



- Fracture of forearm



according to age

8/10 years

10 degree is accepted but without rotation. (angulation)

after 13y (as adult)

any fracture in radius or ulna

open reduction internal fixation to maintain supination and pronation

to get out motion and preserve stable anatomical reduction and early motion.

- Treatment of Montague fracture closed reduction to radius and internal fixation of ulna.

- Frykman classification closed reduction and internal fixation

non-displacement

Cast below elbow

- No Different between Cast above elbow and below elbow.

If - loss of reduction

- Displacement more than 2
- failure of cast

} → open reduction internal fixation by plate or by key wire → then augmentation by external fixation.

- volar Barton fracture $\equiv$ Marginal intraarticular volar fracture.

- Dorsal Barton fracture $\equiv$ Dorsal Marginal intraarticular fracture.

- Scaphoid divide into

- proximal pole
- waist
- distal pole

