BONES & BREAKS

Trauma & Fractures

Q1: My aunt who is in her 60s fell in the dining room and injured her right shoulder. Now she can't lift her arm. Doctor says that she needs a surgery. Is it a serious issue?

Fracture at the upper end of the arm bone (around the shoulder) is a very common consequence after a fall. A fracture with one line (ie. in 2 parts—head and shaft) can be managed with plaster but 3 or 4parts fracture of upper end of arm bone may need surgery (correct positioning and fixation with plate). This kind of surgery helps in union of fracture in about 6-8 weeks and also allows early movements which are important to avoid stiff shoulder. Usually multiple part fractures in young patients happen with severe trauma but in elderly women like your aunt, it can happen with trivial injury because of weak bones (osteoporosis).Well, in all cases, post surgery physiotherapy is of immense value.

Q2: I had a scooter accident and broke my collar bone. The casualty medical officer of the government hospital has given me just a shoulder arm pouch, is it sufficient?

I doubt. The collar bone is a very commonly fractured bone and old school of orthopedics says 90-95% of fracture clavicle unite with a 'Clavicle figure of eight belt', and nothing more is required. The time of

union is usually 6 weeks and normally on X-Rays the horizontal fracture ends are overriding each other. But all that is acceptable. A surgery is only indicated in selected cases, when bones don't unite and remain painful even after 6-8 weeks, where the bony spike is impinging the skin aggressively. Also when the lateral end of the clavicle fractures, which are likely to create functional deficit after the not-so-correct healing.There are pre-contoured plates available for clavicle fractures if surgery is required. Some small outer end fresh fractures can be fixed percutaneously with steel wires too, with plate and K wire fixation.

Q3: Once I watched a child's index finger chopped off with a sharp knife. Can the finger, which is completely detached from the body, be reattached?

Looks unlikely. In cases of fingers, micro vascular surgery is not easy and the success rate is very low but the same is not true about bigger limbs like forearm and leg where plastic and vascular surgeons can do a good job. Nevertheless, plastic and vascular surgeons are capable of saving the fingers sometimes, provided the patient is operated within 4 to 6 hours after the trauma.

Q4: I am a paramedic at a Primary Health Center (PHC) in a rural subdivision and we get quite a few cases of injuries of crushed hands (from crusher machines) which we refer to higher centers. I am curious to know what their fate is.

During the harvest season thresher-crushed injuries are common in villages which lead to mutilation of hands, may be of the forearm too. Besides the bones, tendons (the muscles elongations), nerves (for

sensation) and blood vessels (for blood supply) are also damaged and to salvage the limb/hand, blood supply needs to be restored first. This has to be followed by treatment of other components to make the limb functional. This is a very uphill task and needs joint effort of vascular, plastic and orthopedic surgeons. May take a long time for rehabilitation.

Q5: My son is a young charted accountant and sustained fracture of arm, which was operated upon. But even after the fracture healing, the wrist and hand is paralysed. Can you tell me why?

Your surprise is genuine because fracture of arm bone humerus is geographically far from wrist and fingers. Try and understand the fact that fracture of humerus (arm bone) at middle 1/3 usually needs open reduction (setting of the bone with surgery) and internal fixation by a steel or titanium plate. It can also be fixed along the medullary cavity (the hollow space in the bone) from upper to lower end by steel or titanium nail. Once the fracture is nicely fixed, it ‘most probably’ will unite but alongside the bone, there is the radial nerve which provides strength (motor supply) to muscles of wrist and hand.

Any injury to this nerve by the fractured fragments preoperatively or during surgery results in the loss of stretching movement of the hand upwards. Your son may have suffered something of this type.

In such a case, your son needs to wait for 6-8 weeks and then go for a special test called Nerve Conduction Velocity (NCV) test and EMG (Electromyography) test to ascertain the seriousness of injury. The orthopedic surgeon may ask you to wait and watch for natural recovery and if unfortunately it doesn’t happen, the option is either repair of the nerveand if this is not possible, other muscle tendons are

transferred to compensate for the paralysed group of muscle. Both the surgeries are technically demanding but in expert hands the results are satisfactory.

Q6: My son is only 8 years old and broke his long bone of thigh at the middle. The doctor gave me an option: either to go for plaster or nailing. It's very confusing. Please elaborate.

Long bone like Tibia (main bone in leg), Radius and Ulna (in forearm), Humerus (in arm) and Femur (in thigh) can be treated without any surgery in children up to 8-9 years. All they use is close setting/reduction and POP (Plaster of Paris) or fiber cast. Anybody beyond 15-16 years has to be compulsorily operated upon because the bones can't be held in correct position and have tendency to go for non-union.

The remaining in between age group (from 8 to 16) is a grey area with no hard and fast rules and depends from case to case and doctor. For such patient, Titanium Elastic Nail (TENs) system is available now, which is introduced into the long bone from one end to other, fixing the fracture under vision, ie. computer screen guidance (image intensifier control). The surgical time is short, almost no blood loss and there is no chance of fracture displacement. So TENs is presently a good way out for this age group of children who are not adults but have large bones. You may discuss with your specialist and decide.

Q7: Three months ago my aunt, 58, had a fracture at the wrist and she became alright after 2 months of plaster. Now my friend, who is just 25, sustained fracture at the same site and the doctor says

it needs plate fixation. I have heard, fracture healing is difficult in the old, then why this strange advice?

The common fracture at wrist (lower end of forearm bone called radius) giving rise to dinner fork like deformity is called Colle's fracture; usually a result of osteoporosis (weak bones).

Such kind of fracture in your aunt's case needed close manipulation and plaster under sedation or local anesthesia. The fracture heals in six to eight weeks; wrist exercises follow for say two weeks. But in a young person like your friend, it is not a fragility fracture and mostly fracture fragments are displaced with involvement of wrist joint (called dorsal or Volar Barton). Although such fractures can also be close reduced and plastered, it may haveresidual stiffness of wrist post healing.

Therefore special plates are used to surgically fix the fracture and this to follow with early mobilisation (movement) of wrist for better results. This may be the reason for the surgical advice in your friend's case. If you have any doubt, take a second opinion.

Q8: After a motorbike skid I had an injury on my fingers, doctor took an X-ray and said, it's just a soft tissue injury. Now after a month, there is deformity in 2 fingers and I can't straighten them.

First of all soft tissue injuries in fingers are not to be taken casually. You must consult an orthopedic specialist immediately because one month is a long time for finger injuries. In your case, it appears that the extension apparatus (tendon and sheath) at the back of fingers, which is required to straighten the fingers, was broken, and since the fingers were not immobilised in a straight position for one month, the tendon couldn't heal.

The free pull of palmer side tendon on finger joint is responsible for bendingof finger (flexion) and hence the deformity. This is buttonhole deformity, similarly mallet finger can happen at the distal end of the finger.

Now in your case, after one month, surgery is the only option. That is, open repair of extensor apparatus and fixing of the finger with straight 1mm needle-like wire, holding it in this position for one month. For sure, fingers can be salvaged but sometimes results may not be fantastic. The option is worth trying.