

THE PREVALENCE OF MISMANAGED TRAUMA IN DHQ

TEACHING HOSPITAL ABBOTTABAD

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ABSTRACT

A prospective study was conducted to determine the prevalence of mismanaged trauma from Jan, 1990 to December, 1990.

One Thousand and Fifty patients were admitted in Orthopaedic Department during the period out of which 665 patients came in with trauma, 210 of whom were with complications of mismanagement.

251 patients (37.74%) reported after one week of the injury and 278 (41.8%) came after receiving treatment from one or more bone setters.

The common complications of mismanagement were malunion, unreduced dislocations, contractures, gangrene and infections.

INTRODUCTION

Trauma is at increase in the modern, swift life. The treatment of fracture and dislocation demands a greater amount of ready knowledge, self reliance and perfect skill. The goal of fracture treatment is to achieve union and restore the anatomy and function of the injured part to as nearly normal as possible in the shortest possible time.

The consequences of mismanagement are hardly less serious and disastrous to the surgeon than to the patients himself. Despite the most assiduous attention and best efforts patients may be lame and deformed for life¹.

Acute dislocations should be reduced as soon as possible. While a joint is dislocated the metabolism of its hyaline cartilage is disturbed and synovial fluid functions are impaired. Hyaline cartilage may degenerate over a brief period and irreversible changes occur rapidly thereafter. Consequently when an unreduced dislocation is finally reduced, painless and normal joint motion and function should not be expected.

The open fractures and dislocations demand even more meticulous care. The value of thorough wound excision, copious irrigation with normal saline, fracture stabilisation, antibiotics, tetanus and gas gangrene prophylaxis can not be over emphasised.

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MATERIAL AND METHODS

All the patients admitted in Orthopaedic Unit from 1st January, 1990 to 31st December, 1990 with trauma or its complications were included in the study. Those requiring out door treatment were not included. The time since injury, mechanism of injury, previous treatment from doctor or sianas (the bone setters are commonly known as sianas), complaints and the clinical findings were recorded. Routine investigations and special radiography, muscle charting, nerve conduction studies, pus C/S and staining for acid fast bacilli were done in appropriate cases.

The patients were divided into following groups according to the time interval lapsed between injury and their reporting for treatment in the hospital.

| | |
|-----------|------------------------------|
| Group I | within 24 hours |
| Group II | more than 24 hours to 7 days |
| Group III | Day 8 to Day 30 |
| Group IV | One month to one year |
| Group V | After one year |

RESULTS

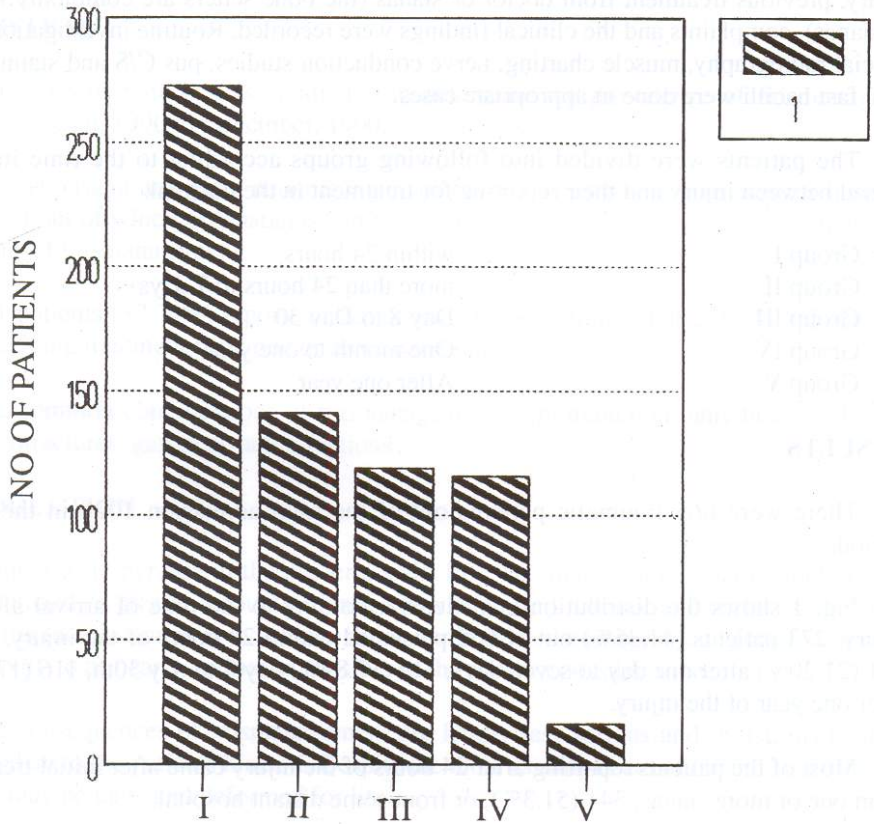
There were 665 traumatic patients out of the total admission 1028 in the study period.

Fig. 1 shows the distribution of patients according to the time of arrival after the injury. 273 patients (41.35%) out of 665 presented within 24 hours of the injury. While 141 (21.20%) after one day to seven days, 119 (17.89%) day 8 to day 30th, 116 (17.44%) after one year of the injury.

Most of the patients reporting after 24 hours of the injury came after initial treatment from one or more sianas, 341 (51.3%), or from some distant hospital.

A total of 234 patients were admitted with complications. Table 1 shows the break up of the complications. The early complications included vascular injuries 3, volkman's ischaemia 9, visceral injuries 1, hypovolaemic shock, haemo/pneumo thorax, fat embolism, wound infections, gangrene and paraplegia.

Distribution of Patients according To Time of arrival after injury



Time Period

- I = Within 24 Hours
- II = 1 to 7 days
- III = 8 to 30 days
- IV = After one year
- V = More than one year

TABLE — I

SITE OF MALUNION

| Bone involved | No of patients | Percentage |
|------------------------|----------------|------------|
| Supracondylar fracture | | |
| Humerus | 25 | 41 |
| Malunited Radius/Ulna | 10 | 16.39 |
| Humerus Shaft | 02 | 3.8 |
| Femur | 18 | 29 |
| Tibia/Fibula | 03 | 4.92 |
| Ankle | 03 | 4.92 |

The commonest maltreated injury was fracture of the lower humerus. Children and young adults were the common victims and complications included, volkman's ischaemia, gangrene, volkman's ischaemic contractures, malunion with limitation of movements, cubitus varus and ulnar nerve palsies. The photograph I, II show the impending gangrene and Volkman's ischaemia with tight bandages.

Table-2 shows the site of malunion and photographs III, IV and V depict some of the malunited fractures with severe functional impairment.

TABLE-II

UNREDUCED DISLOCATIONS

| Joint involved | No of patients | Percentage |
|---------------------|----------------|------------|
| Shoulder | 1 | 4 |
| Elbow | 10 | 40 |
| Carpometacarpal | 4 | 12 |
| Metacarpophalangeal | 5 | 20 |
| Interphalangeal | 2 | 8 |
| Hip | 3 | 12 |

Infections included cases of open fractures with crush injuries, who first received treatment elsewhere having contaminated wounds, containing all sorts of foreign bodies, stones, mud, grass, wooden pieces, cloths, gun powder, metallic splinters, naswar and turmeric used as haemostatic agents. They were stitched without wound toilet, resulting in widespread skin muscle necrosis and resistant infections. They needed prolonged admission for wound excision, skin cover and fracture treatment. The chronic infections in the form of chronic osteomyelitis were 15 and the infected implants were 11, 6 of which were operated upon in this department previously while 5 came from other hospitals.

Distribution of unreduced dislocations is shown in Table 3. Upper limb joints were commonly neglected. All the admitted cases were operatively reduced. The functional results were excellent in none, good 2, fair 15, and poor 8. The prognosis depended upon the duration the joint remained unreduced and the cartilage damage. There were 21 contractures, post burn and post traumatic contractures were 11, Volkman's ischaemic contractures 7, and post infective contractures were 3. The patients with nerve injury were 10; ulnar 3, Radial 4, Brachial plexus 1 and sciatic nerve 2. Spinal injury leading to Quadriplegia/paraplegia were ten cases. One of the quadriplegics died, while 2 recovered with traction and reduction. Pressure sores, and urinary tract infection were common (6 patients) complications of the paraplegics.

TABLE-III PATIENTS ADMITTED WITH COMPLICATIONS

| Complications | Nol of Patients |
|--------------------------------|-----------------|
| Ch. Osteomyelitis | 26 |
| Unreduced Dislocation | 25 |
| Contracture | 21 |
| Non union | 18 |
| Infection | 15 |
| Hypovolaemic Shock | 13 |
| Gangrene | 11 |
| Paraplegia/Quadriplegia | 10 |
| Volkman's Ischemic Contracture | 10 |
| Nerve Injury | 9 |
| Urethral Injury | 7 |
| Vascular Injury | 3 |
| Fat Embolism | 2 |
| Hemo/Pneumothorax | 2 |
| Visceral Injury* | 1 |





DISCUSSION

Mismanaged trauma is still frequently seen in the under developed countries. Unfortunately the general public and even the educated people have misconceptions about the treatment of fractures and dislocations. The patients are first treated by sianas and only after ruining come to the hospital, with complications, thus increasing the work load, expenses and prolonging hospital stay with poorer functional results. The pity is that even some doctors patronise the sianas.

The tight bandages of the sianas has resulted in limb loss in 4 patients and contrac- tures in 7. The functional results of operation for V.I.C. are not satisfactory². The treat- ment of open fractures needs meticulous care. They should be covered with a clear dress- ing, splinted and transported to proper hospital, where under general anaesthesia and full

operation ritual, wound excision should be done.

The extent of muscle damage can be usefully assessed by consistency, changes in colour, loss of contractility on mechanical stimulation and failure to bleed which are indications for wide excision which must be ruthlessly pursued until only viable bleeding muscle remains³. No tourniquet should be used during this procedure. All the foreign bodies, fragments of clothing, wood, grass or mud, shell fragments or bullets should be removed. The suction effect of missile injuries suck in all type of foreign bodies into the wound⁴. There is evidence that bullets do not get sterilised with the heat generated during its passage from the barrel⁵. Hence toilet of the missile and bullet track is required. Copious irrigation with normal saline should be carried out during the course of wound toilet and as much as 10 to 14 litre of saline has been advised⁶. Wound should be left open instead of stitching it under tension. Prophylactic antibiotic should be started and penicilline is still the most potent antibiotic against gas gangrene and tetanus organisms, and should be given intravenously in full doses⁷. It can be augmented with tetracycline. Fracture can be immobilised with improvised cast and pins or external fixator. Malunion is caused by imperfect reduction or improper immobilization. By strict definition malunion is the rule in closed treatment of fracture but it is frequently compatible with functions. Mostly it can be prevented by skillful treatment of fresh fractures. Kenzora and Burgess have pointed out malunion developing in multiple trauma where treatment of life threatening injuries takes precedence⁸. The objective of surgery in malunion is to restore function, surgery is rarely indicated for cosmetic reasons alone. Neglected dislocations requiring open reduction should be carefully handled during the operation to prevent fracture or damage to the articular cartilage. The results are often not satisfactory and replacement arthroplasty or arthrodesis is frequently done. The proper splintage of the burnt, infected or traumatised limb prevents development of contractures.

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