

Analysis of the Cases of Injuries of Hand

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Introduction :

INJURIES of the hand form a large proportion of all injuries of the body. This paper presents figures of all hand injuries admitted in the Plastic Surgery unit of this hospital, during the period of five years, i.e. 1968-1972. Besides these cases there have been a large number of hand injuries treated in our out-patient's department.

From this incomplete data, it is obvious that the incidence of hand injuries is increasing every year, which forms a cause of concern. The problem of hand injuries is a big one; as it causes immense loss to the injured and his family, not to mention the loss of man hours to our poor developing

country. Though the mortality rate of an isolated hand injury is practically nil, the morbidity rate is very high. It is surprising that till now, no proper thought has been given to prevent the Industrial accidents, which form the main bulk of all hand injuries.

Incidence (Table 1) :

This table shows incidence of hand injuries every year. One finds that in the years 1969, 1970 & 1971, there has been a sharp rise in the number of hand injuries.

Sex Incidence (Table 2) :

It is apparent that males are more involved in hand injury. This is quite



Figure 1



Figure 2

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natural, as till now females have not invaded the industrial jobs in great numbers. It is still taken as a man's job. Females are mostly involved in domestic accidents.

Age incidence (Table 3) :

Majority of the cases involved are between the age groups of 11-30 years; showing that mostly young men who start their jobs in early part of their lives and do not have previous experience are prone to accidents. If these injuries do not get proper attention, these poor people are crippled for life.

Number of Days Each Patient has to spend in the Hospital (Table 4) :

This table shows that 60% of cases had to spend more than 10 days and about 30% cases had to spend more than one month in the hospital. In a big city like Calcutta, where there are few Plastic Surgery Units, which are always overcrowded, most of the beds are always occupied with hand injury cases.

Sources of Hand Injury (Table 5) :

This differs from accidents in general. Here accidents in Industry form a major part, 40-50%. I have made a separate column for explosive injuries, which were quite dominant during that time. As this is expected to be a temporary phase, mainly the Industrial accidents are discussed in details, in this paper.

Treatment

Prophylaxis :

1. In industries, all the employees before they start work on a particular machine,

should be given proper instructions regarding its use and the hazards involved, when handled carelessly.

2. Proper investigations should be carried out regarding the conditions giving rise to the accident in each case; the efficiency of the machine or the fatigue of the man working on it, etc.
3. Regular inspection by the Medical Factory Inspectors, to see if the prophylactic precautions and safety measures are being observed.
4. All the hands injuries should be sent directly to a Plastic Surgery Unit, to get proper treatment to start with.

Home accidents constitute the other significant source. Even though we do not have the mechanical gadgets i.e. Slicers, Washing Machines, etc., in an ordinary home, the majority are accidents caused by cuts with sharp knives or broken pieces of glass.

Operative Treatment :

Primarily the function of the hand is given priority and not just anatomical restoration. Appearance is important but is always secondary. Such as, in case of a labourer, it is better to sacrifice one or two fingers, when they are crushed (EXCEPT THE THUMB), than to keep the patient in hospital for lengthy reconstructive surgery, at the cost of his job and earnings. In case of a skilled worker, the problem of reconstructive surgery must be discussed between the patient, the surgeon and the employer, and the course of treatment is then implemented.

CASES OF HAND INJURY

YEAR	TOTAL INJURIES	HAND INJURIES	PERCENT
1968	250	71	30.9
1969	256	97	37.9
1970	290	116	40.0
1971	320	139	43.5
1972	398	114	28.6

Table 1

SEX INCIDENCE

YEAR	MALE	FEMALE
1968	61	10
1969	82	15
1970	103	13
1971	119	20
1972	94	20

Table 2

AGE INCIDENCE

YEAR	0-10YRS.	11-20YRS.	21-30YRS.	ABOVE 30YRS.	TOTAL
1968	9	12	31	19	71
1969	9	26	38	24	97
1970	11	31	51	23	116
1971	14	25	56	44	139
1972	10	22	45	37	114

Table 3

PERIOD OF HOSPITAL STAY

YEAR	D A Y S			
	0-10	11-20	21-30	ABOVE 30
1968	18	15	17	21
1969	34	25	16	22
1970	38	27	20	31
1971	33	37	29	44
1972	30	29	20	35

Table 4

SOURCE OF HAND INJURY

YEAR	INDUSTRIAL	DOMESTIC	ROAD ACCIDENT	BOMB EXPL.
1968	38	13	10	10
1969	46	16	16	19
1970	54	18	10	34
1971	58	17	24	40
1972	53	25	16	20

Table 5

Skin Lacerations :**Cleaning and primary suture**

If skin loss is present—

- (a) Free graft, if deep fascia is intact.
- (b) Pedicle graft or local flap if tendons, bones or nerves are exposed.

Nerve Injuries :

In cases of clean wounds, primary suture of the nerve is undertaken. After two or three months, if the nerve shows no signs of regeneration, wound is explored again and secondary suture of the nerve is done.

Tendon Injuries :

After proper cleaning of the wound, primary suture of the tendon is done. If the injury is in 'No man's land', the distal part of the sublimus is excised, Profundus tendon is repaired. Proximal end of sublimus is sutured to the proximal part of the Profundus. Secondary tendon grafting is avoided as far as possible.

If there is complete disorganization of the anatomy of the hand including the thumb, above wrist amputation is done (Photograph 1), followed later by Krukenberg operation. If the thumb is not involved in the accident, then some type of reconstructive procedure is undertaken.

(a) If all the four fingers are crushed; a fixed stump long enough is reconstructed, against which the thumb can be opposed (fig. 2).

(b) In injuries of the index finger, we try to maintain the length of finger either by cross finger, cross palm or acromiopectoral flap.

(c) In cases of injuries of the ulnar three fingers, partial or complete amputation of the involved finger is undertaken.

In injuries, where the thumb is involved, a reconstructive procedure is undertaken to provide its function.

Summary :

All cases of hand injuries admitted to the Plastic Surgery Unit, S.S.K.M. Hospital have been reviewed. Age and sex incidence are shown. Importance of hand injuries due to industrial accidents is stressed. Prophylactic measures to prevent these accidents have been explained in brief. The principles of treatment of hand injuries, carried out in this Unit, are mentioned.

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