

PENETRATING SPINAL INJURIES – A FOLLOW UP STUDY

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6 cases of post gunshot Spinal Cord Injury is being presented. No appreciable neurological recovery was observed on follow up. No complication as a result of retained bullet/pallet in side the body was observed.

Penetrating Spinal Injuries leading to neurological deficit is in itself very uncommon. It has world wide varied incidence eq. in USA, Africa, Europe and other Asian countries. The gunshot injury is relatively common out of all types of penetrating Spinal Injuries. In India gunshot injury leading to Spinal Cord Injury is relatively very uncommon. Only 2 or 3 cases per year of such injuries attended our hospital. Such injuries are mostly prevalent in few criminal infested districts of U.P. These gunshot injuries are also associated with injuries to chest wall, abdomen and other areas of body.

Missile injuries are generally of two types low velocity and high velocity (the bullet or fragment moving at 1000 m/sec or more).

Because of contrasting modes of Injury, low velocity missile can produce injury by direct contact leading to contusion, crushing, laceration, haemorrhage & paralysis, while high velocity missile can produce massive necrosis leading to paralysis merely by the dissipation of enormous energy throughout the soft tissue and without any naked eye evidence of viscous or cord Injury (Morgan et al 1971, Myers, 1973). Bullets and fragments which tumble rather than spin, produce greater tissue destruction.

The iatrogenic impalement of the spinal dura has been reported following sublamellar

wiring of fracture of spine (Dunn, 1987).

METHOD AND MATERIAL

Present retrospective study comprises of six cases of Spinal Cord Injury following gunshot who were admitted to this hospital for rehabilitation. All the effected persons were male. Age ranged from 25 years to 65 years with a average of 35 years. Out of six cases, 4 cases were in third decade. Duration of injury ranged from one month to three & half years with a average of ten & half months (Table No. 1).

Neurological status

On admission, 5 cases were having complete lesion while in one case it was incomplete lesion. In followup of 2 cases, the course remained stationary while in 3 cases, there was some sensory improvement in the level. Only in one case there was complete return of bladder and bowel as well as motor recovery in one lower limb with partial recovery in other lower limb (Table No. 2).

Complications

Two cases having dorsal lesion developed sacral sores and in one case sore at greater trochanter developed which later required flap

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rotation for healing. In one case having cauda equina lesion developed chronic osteomyelitis of distal phalanx of 3rd toe due to initial sepsis. In none of the case, lead poisoning from retained bullet, migration of bullet, Arterio-venous fistula or spinal/para spinal infection was observed.

DISCUSSION

Taylor (1941) said 'when... we remember how narrow a bottle neck is the cord in the pathways from the relatively enormous brain to the vast-periphery, we have the explanation of two salient facts : first that injuries of the cord must commonly cause permanent paralysis. Second that a small volume of trauma has disastrously extensive consequences.'

However, there is hope for some recovery, of unpredictable degree, in partial or incomplete injuries of the cord but here a distinction must be drawn between gunshot and stabbing. In the

partial gunshot injuries little or no recovery occurs (Taylor 1941, Morgan et al 1971, Heiden et al 1975, Waters 1984), but in the incomplete or Brown Sequard deficit of stabbing, considerable recovery can be expected (Rosenberg, 1957).

There is little disagreement that deteriorating neurological function in the early post injury period constitutes a surgical emergency, possibly the result of intraspinal bleeding. Even so, the result of surgical intervention are disappointing. Surgery or no surgery makes no difference in the out come of results. Hence low velocity penetrating Spinal Injury requires proper wound toilet, antibiotics and follow up to avoid any complication. In high velocity penetrating injuries with other associated injuries require surgical exploration and repair.

These Spinal Cord Injuries cases are being managed like any other spinal cord injury except keeping in mind the long term complication.

Table No. 1 Age, Sex & Duration

Name	Age	Sex	Duration
AKM	30	M	One month
KNS	30	M	3,1/2 years
SS	30	M	3 months
SKG	25	M	4 months
SM	65	M	10 months
RKM	30	M	3 months

Table No. 2 Neurological status

	On Admission	Followup
1.	Complete below T6	Same
2.	Partial Bladder & Bowel with incomplete below L5	Bladder & Bowel & LT. LL. recovered, partial RT.LL.
3.	Complete below T7	Hypoasth. between T7-T12 Motor same
4.	Complete below T10	Below L1 complete
5.	Complete below L1	Hypoesthesia below L3 Anaesthesia below L5
6.	Complete below T6	Same

Table No. 3 Complications

1.	Bed sores	Three cases.
2.	Chronic O.M. III distal phalanx.	One case.

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