SUMMARY

During the period 1987 to 1990 , 33 cases of atlanto axial injuries were studied , 20 males and 13 females , the average age incidence was 25 years . Most of the cases were due to road traffic accidents , then fall from hights .

All cases were subjected to complete neurological examination, local neck examination and radiological evaluation .

Cases presented in the acute stage and those late cases presented with neural deficit were put on skull caliper traction for a period of 6-8 weeks and then tests for stability were done . Unstable cases were candidates for posterior upper cervical or occipito cervical fusion . Cases were followed up for stability, neurological manifestations, reduction, rate of union, pain, range of motion and complications .

Quantification of the results according to the follow up score system enabled us to clarify the results of different lines of treatment.

The duration after which the patient presented was found to affect significantly the final results through affecting the reducibility of the lesion . All the cases with poor reduction presented in the chronic stage .

Neurological affection was found in 39 % of cases with a residual deficit 12 % .The presence of residual neural defcit affected significantly the final results .The final results were also affected significantly by the amount of reduction . Cases presented early gave 76 % excellant and good reduction, while cases with fair and poor reduction were presented late.

The rate of union of the primary bony lesion and the fusion mass was generally affected by the age of the patient . All cases with type II dens fracture failed to unite and were candidates for fusion .

The range of motion of the whole cervical spine was tested in the follow up after removal of any external immobilization . The range of motion is significantly affected by the line of treatment. Conservative treatment gave the best results . The range decreases with increased neck stiffness with increase in the extent of fusion .Occipito-cervical fusion led to marked stiffness in both the sagittal and rotational planes.

All patients presented with pain . In the early stage upper neck pain , greater occipital neuralgic pain may be present. Sharp pain exaggerating when moving from the supine to the sitting position was characteristic to dens fractures . Holding the head with hands was a common sign for hangman's fractures

and atlas-axis combination fractures . All cases presented late had upper cervical pain due to instability .

Stress lateral radiographs were diagnostic for instability .64 % of our cases were unstable . All cases with late instability were candidates for posterior atlanto axial arthrodesis . Type II hangman's fracture was acutely unstable , but spontaneous stabilization occured by primary bone healing .

All cases performed grafting techniques passed to solid union in a period of (5-20 weeks).

Residual neural deficit affects markedly the final results , this represents 12 % of the cases

Non-union of the fusion mass was not presents in the series . We got one case of wire avulsion due to early ambulation following occipito-cervical fusion. We got also one case of deep burn following application of cement in a liquid form .