FRACTURE OF THE CERVICAL SPINE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Fracture of the cervical spine in patients with rheumatoid arthritis has received only scant mention in the literature. Unlike the normal spine, the ankylosed spine when fractured breaks like a long bone and usually the fracture occurs through what had formerly been the interspace. These fractures present a difficult problem since they frequently occur in elderly people or chronically ill patients who are poor operative risks. We wish to present observations on patients who presented this type of problem, in which the sequence of events illustrates certain important principles in therapy. The experience cited in this report indicates that rapid bony healing at the site of the fracture may not take place in the cervical spine with minimal signs of rheumatoid arthritis. Complications resulting from skeletal traction on the Foster frame are illustrated.

CASE REPORTS

Case 1. A 51-year-old male 6 months previously fell backward from a truck, striking his shoulders. He had pain and soreness in the neck and later noticed that the neck did not “straighten out.” Three months later, one day after riding in a truck over rough ground, he awoke with weakness of the arms and legs. Motor power returned incompletely in 10 days. At the time of admission he complained of weakness in the arms and legs and difficulty in walking for any distance. At age 24 he had had the onset of typical ankylosing arthritis with generalized involvement except for temporomandibular joints.

Examination revealed spasm of the muscles of the neck. The head and neck were held in a forward-flexed or anterior position in relation to the trunk, with the head extended on the neck. There was an incomplete sensory level to C5 bilaterally. Gait was spastic. Breathing was abdominal in type. The grip in the hands was weak and atrophy of the intrinsic muscles was evident. Biceps reflexes were active, while triceps reflexes were reduced bilaterally. Patellar reflexes were hyperactive and Achilles reflexes were reduced. Hoffmann’s sign and abnormal plantar responses were present bilaterally.

Roentgenograms showed marked fracture-dislocation of C5 on C6 and cervical myelogram revealed a partial block at this level (Fig. 1A). Rheumatoid arthritic changes were evident between the vertebral bodies of C6 and C7 with typical bamboo appearance of the dorsal and lumbar spine.

The patient was placed on a Foster frame and traction with 20 pounds of weight...
was applied to Crutchfield tongs. Twelve hours later the patient was taken to the operating room and under general anesthesia blind intubation of the trachea was attempted. Considerable bleeding ensued; the patient became cyanotic and tracheotomy was performed.

Twelve hours postoperatively weakness in the left arm was evident and traction was reduced to 10 pounds. This was followed by a slowly progressive tetraplegia and urinary retention. Decompressive laminectomy, from C4 through C7, was per-

Fig. 1. Case 1. (A) Myelogram demonstrating partial block at fracture-dislocation at C5-C6 level, which was locked at joints of facets. (B) Roentgenogram showing formation of callus at previous fracture-dislocation.

formed 4 days later. The fracture-dislocation was visualized and bony alignment was re-established with 50 pounds of weight applied to Crutchfield tongs. The dura mater at C5 level was compressed by bone and heavy granulation tissue. The spinal cord appeared normal grossly and the dentate ligaments were sectioned bilaterally at the C5 and C6 levels.

Motor strength in all but the left upper extremity improved markedly during the first 48 hours. Subsequently there was complete return of motor and sensory function except at the C5 and C6 dermatomes on the left. Roentgenographic studies showed satisfactory alignment of the dislocation with considerable formation of callus at the C5–C6 level 2 months following operation (Fig. 1B). Three months after opera-