USE OF INTRAVENOUS DIAZEPAM IN ACUTE
SKELETAL MUSCLE SPASM
PRELIMINARY REPORT

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Diazepam has recently become available in a preparation for intravenous injection in a concentration of 10 mg./2 ml. In view of the obvious effect of oral diazepam in reducing skeletal muscle spasm, it was decided to observe the effect of the drug administered intravenously in patients suffering from acute, painful skeletal muscle spasm.

SELECTION OF CASES

A series of 19 consecutive cases comprising 12 patients with acute lumbar disk lesions and 7 with acute cervical disk lesions were given the drug by intravenous administration as a first step in their management. Three patients with severe spasticity associated with a central neurological disorder were also given the drug as a preliminary to correction of flexion spasm of the knee joints and application of plaster of Paris. All cases except one were treated on an in-patient basis. The one out-patient was observed for a period of four hours before he left the hospital.

RESULTS

Every case except four showed a dramatic response to the intravenous injection of diazepam. In those cases with painful spasm that responded the relief of pain was accompanied by an objective reduction of the muscle spasm as measured by range of movement of the cervical or lumbar spine and the degree of restriction of straight leg raising. In 13 out of the 15 patients who responded (and in one who did not show any measurable response) there was a feeling of well-being combined with drowsiness that was likened to the effect of large doses of alcohol. The effect of the drug lasted from two to four hours, after which the muscle spasm returned and the soporific effect gradually diminished. In no case was the effect prolonged more than six hours. In all three of the patients with flexor spasticity a successful reduction of tone was achieved, enabling splints to be applied.
KENDALL: INTRAVENOUS DIAZEPAM IN SKELETAL MUSCLE SPASM

TYPICAL CASE HISTORY

**Diagnosis:** Acute lumbar disk prolapse.

**History:** Acute, severe low-back pain with onset 19 hours previously. Radiation to the left buttock, but not to the leg. No paraesthesiae or numbness.

**Examination:** General—patient obviously in severe pain. Unable to move in any direction. Lumbar spine—forward flexion, nil; extension, nil; lateral flexion, nil; straight leg raising 60 degrees on both sides associated with marked pain in the lumbar region. Nervous system—normal.

**Treatment:** Intravenous diazepam, 10 mg. given over two minutes.

**Result:** Pain-free after six minutes (hardly any relief up to this time). Able to get up and walk. Forward flexion—came within 10 degrees of touching his toes. Extension—still very painful. Lateral flexion—virtually full. Straight leg raising 90 degrees on both sides. Symptoms showed a slow return after four hours—general in-patient management was then in force. No side-effects other than euphoria and drowsiness were noted.

**CONCLUSIONS**

There is a definite place for intravenous diazepam as an adjunct to the established treatment of skeletal disorders of the type mentioned. In itself, however, this method of administration does not constitute a specific form of therapy.

It may well be that intravenous diazepam will also prove to be of use in orthopaedic manipulations of the peripheral joints and the spine and the reduction of fractures, and it is recommended that it is tried in these fields.