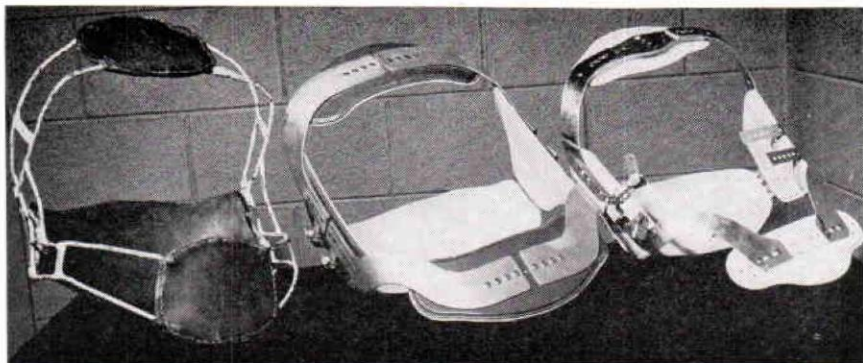


FRACTURE OF THE SPINE

New Treatment Without Plaster Casts

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THE JEWETT BRACE—At the left is the original brace made in 1937. The middle model was made ten years later. At the right is the Jewett Brace made in 1959.

As may be generally known among members of OALMA, the treatment of uncomplicated fractures of the lower thoracic and lumbar spine, without the use of plaster casts, has been developing in recent years. Hyper-extension for the reduction of the compression fracture is obtained on a reversed gatch bed. Measurements of the patient are taken by a qualified brace technician to select a Jewett Brace. The brace is applied as soon as the normal alignment of the spine and reduction of the compression fracture have been obtained. The brace is then easily adjusted, if ordered by the doctor, by the brace technician as the patient progresses to complete recovery.

The plaster cast treatment for fractured spines goes way back many decades at least. Practically everything in orthopedic surgery has been developed because of a preceding instrument, appliance, or method of treatment which needed improvement. The first hyperextension back brace to be used for fractures of the spine, as far as we know, was described by Dr. Arnold Griswold in *The Journal of Bone and Joint Surgery* (Vol. 18, page 784), in July 1936. This was an adjustable brace put on the patient after two or three months of wearing a hyperextension plaster jacket. It was never used as a primary form of immobilization of fractured spines.

Dr. E. L. Jewett, acting on the principle of Dr. Griswold's brace, made the first rigid hyperextension spinal brace to be used as a primary definitive treatment for the uncomplicated compression fracture of the lower thoracic or lumbar spine. His first patient was an eighty-eight year-old lady, who had sustained an uncomplicated compression fracture of the second lumbar vertebral body from a jack-knife injury when her car went over a deep hole in the road. This patient was very thin and was adamant about not wearing a plaster of paris cast. Dr. Jewett assured her that if she would wear a plaster cast for two weeks or so, in the meantime he would make a hyper-extension brace which would be just as effective as a cast and much more comfortable, as well as lighter. He made two plaster casts of this patient

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when she was in adequate hyperextension on the fracture frame. One cast was removed immediately and was used as a model for the brace, whereas the second one was worn during the two-week period when the brace was being made by a local mechanic and covered by a local saddle and leather worker. The first brace was described and written up in *The Journal of Bone and Joint Surgery* (Vol. 19, No. 4) October 1937. At this time, practically all well fitting braces for the back were made from a plaster of paris cast as a mold. This method of making hyperextension braces was used by Dr. Jewett until 1942, when he left for the second world war.

When Dr. Jewett came back in 1946, one of his patients was a doctor's mother who had a severe cardiac involvement and was very obese. She had an uncomplicated compression of one of the lumbar vertebral bodies and the same method of treatment as described above was used. However, this patient had to be anesthetized while on the Goldthwaite bars for the application of the plaster casts. This procedure took about an hour and was very severe on the patient. On returning to her room, she never left her bed and died about five days later. At this time, the idea was evolved of making this hyperextension back brace from the patient's body measurements only. Mr. Robert Blair was the originator of this method of measuring and was of great assistance to Dr. Jewett in coordinating and developing the mechanical aspects of this method.

Since 1946, many doctors over the entire world have treated thousands of uncomplicated fractures of the lower thoracic and entire spine without any of these patients being anesthetized or taken to the operating or cast room. They have generally been treated on admission to the hospital with gradual hyperextension on the reversed gatch bed and have had measurements made for the brace as soon as possible. Where there has been a minimum or no compression, many of these patients have been made ambulatory the same day.

The above account, we hope, explains why we are most anxious to have the brace used only in a standard manner because we are not putting out the brace simply as such, but as an integral part of a treatment for fractured spines and other allied conditions. The brace must be expertly measured, made, and applied. Prescribers, manufacturers, and users of the brace must know about its many pitfalls.