stretchers in a certain number of lorries (two slung under the canopy on each side). If this proposal is brought into effect, the potential motor ambulances available for a force and the subsequent ease of evacuation will be enormously increased.

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## NOTES ON A CASE OF FRACTURE-DISLOCATION OF THE SPINE.

By Major M. MORRIS.
*Royal Army Medical Corps.*

Cases of severe trauma to the spine making an uneventful recovery are of sufficient rarity to warrant attention being drawn to this case.

It is now four months since, summoned by a wire, I was piloted to Alexandria by the Royal Air Force to see Private W., aged 23, of the 1st South Wales Borderers, who had dived from a height of about five feet into an open-air pool containing no more than two feet of water. The result of the dive was instantaneous acute pain in the neck, a clicking noise and inability to move the head in any direction at all. I found on arrival at Ras-el-Tin a healthy well-made soldier somewhat cyanosed in colour lying on his back and completely unable to move his head, which was locked. The chin was in the middle line and the head appeared to be slightly flexed. I could detect no alterations in his reflexes, and no paresis. The slightest movement of the patient produced agony.

Examination of the spine revealed no abnormality as regards position of the spinous processes. The neck was exquisitely tender on palpation.

Radiological examination revealed complete dislocation forward of the third on the fourth cervical vertebra with fracture of the upper anterior angle of the body of the fourth.

The articular processes were also fractured.

The patient was anæsthetized by Major G. F. Allison, R.A.M.C., and traction carried out on the spine by pulling on the head, my hands being held below the mandible. At the same time I gently rotated the head and flexed the cervical spine.

The patient was very cyanosed for a minute or two during the manipulations and gave us some anxiety, but a clicking noise, a return of good colour, and the fact that the head became mobile and movements of the neck possible, led us to believe that reduction had been effected. This view was borne out by another X-ray picture.

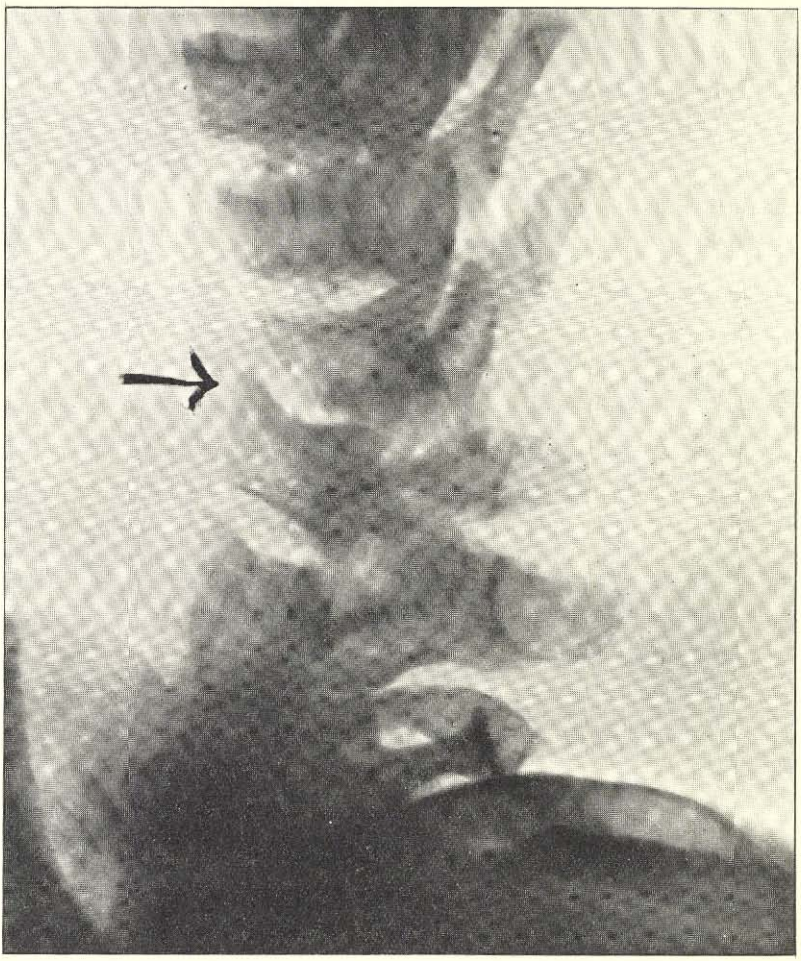
A figure-of-eight plaster bandage was then put round the neck, occiput and forehead. This was left on for six weeks. It was then removed and vigorous massage and radiant heat commenced—later, exercises were begun.

The patient is now on full duty. He is free from pain. Flexion and lateral rotation of the head are perfect. There is slight diminution of extension and he is unable to tilt his chin upwards more than a few inches. Radiological examination at present shows some callus formation, and I

am unable to explain the absence of any pressure symptoms throughout the history of this case.

This type of injury is of course caused by indirect violence and is known as a complete fracture or fracture-dislocation, as compared with the incomplete variety.

Dislocation would appear to be commonest between the fifth and sixth



cervical vertebræ, is most commonly unilateral, and almost invariably the result of forcible flexion of the head and neck with some rotation. In these cases the head is turned to the opposite side, is fixed, and the ear is raised, not as in the above case which was bilateral with the head fixed in the middle line.

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