Clinical and other Notes

A covered way, so that nurses and patients can pass to and fro in any weather.

I shall be pleased to give further details to anyone interested in the subject.

A CASE OF GUN-SHOT WOUND OF THE HEAD WITH A PIECE OF SHRAPNEL IN THE BRAIN; VALUE OF THE USE OF AN ELECTRO-MAGNET AND X-RAY SCREEN FOR REMOVAL.

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LANCE-CORPORAL W. R., of the 9th Black Watch, "D" Company, received a gun-shot wound on September 25, 1915, in France. The piece of shell entered the skull about the middle of the left temporal region. He had an injection of antitetanic serum four hours after the injury. He was admitted to hospital on October 9. He was conscious, complained that he could not sleep and that he had considerable pain. The superficial wound in the side of the head had healed. The temperature was 99° F., pulse 60. Next morning he vomited.

A skiagram taken on the 11th showed some depressed fragments of the internal table round a small hole in the middle of the squamous portion of the left temporal bone, and the shadow of a piece of shell about half an inch by a quarter of an inch was seen on the plate, one inch behind the hole and one and a half inches beneath the surface.

On the 13th Mr. Leslie Paton examined the eyes (pupils not dilated) and found the right optic disc, highest point + 3D., edges blurred, veins distended, general retina + 5, swelling 24. Left optic disc, highest point + 5D., general retina + 1, swelling + 4. The patient had sensory aphasia, word-blindness, but no apraxia.

Operation.—A large temporal flap was made and the opening in the skull enlarged; pieces of depressed bone were removed, the torn edges of the membranes were opened up and about two ounces of thick pus under pressure escaped. The piece of shell could not be felt with the probe and a rubber tube was put in and free drainage established. On the 15th another skiagram showed that the piece of shell had dropped farther back in the abscess cavity into the occipital lobe. The temperature at this time varied between 97° and 99° F., but, on the 23rd, the evening temperature was 100° F., on the 24th 101° F., on the 26th 102° F. It then became normal and has remained so ever since. The pulse-rate varied between 64 and 100, and after the 26th has been from 72 to 80. On the 23rd the eye appearances were: right optic disc, highest point — 3·5D. Left optic disc, highest point — 4D.; veins still
much distended. A probe was passed down along the abscess track and a stereoscopic skiagram taken (see plate). The fragment of shell was found to be lying in the occipital lobe, one-eighth of an inch in front of the tip of the probe and half an inch mesial to it. A steel probe was then passed down the track, and an electro-magnet, capable of lifting 14 lb. weight, was applied to the probe and held in position for a few seconds, but the bit of shell was not drawn out by this means.

It then seemed to me that one might be able to see the fragment and remove it under the X-ray screen, and, after consultation with Dr. Florence Stoney, the radiologist to the hospital, the attempt was made on November 9. The steel probe was again passed in along the track, and one was able to see quite clearly the probe and the fragment. It was found that the latter had been pulled forward by the magnet and caught in brain tissue. A crocodile forceps was then passed along the track to a depth of four inches, and after some manipulation the piece of metal was seized and removed. The patient was not under anesthesia, and felt no pain, except just as the sharp edges of the fragment came into contact with the edges of the superficial wound.

On the 13th the patient's general condition was quite good. On November 17 the wound had healed; his aphasia was less marked; he still had some slowing of mental cerebration and at times difficulty in naming articles, with some loss of memory in naming places and for recent events. The eye symptoms were: Right optic disc still blurred; swelling had subsided very much; highest point of disc, -2nd.; general retina ametropic; small linear hemorrhages, especially in lower part of disc. Left optic disc still all blurred; subsidence not so marked in appearance as in the right eye; swelling; highest point of disc, -2nd., some hemorrhages.

The two practical points demonstrated are:—

(1) The use of an electro-magnet for the removal of portions of shell which are capable of being so attracted.

(2) The fact that one can demonstrate bits of metal inside the skull, although the X-rays have to penetrate two layers of bone; the surgeon may thus receive very material assistance in such cases by seeing the relationship of fragment to instruments during actual removal.

My thanks are due to Dr. Florence Stoney for the excellent skiagrams and help with the screen; to Dr. Leslie Paton, who kindly worked out the eye conditions; to Major Parsons, the officer in charge, and to Colonel Peterkin, the Deputy Director of Medical Services, for permission to publish this case.