A CASE OF BILATERAL ERB-DUCHENNE PALSY

Major W. E. I. FORSYTHE-JAUCH, M.A., M.B., B.Chir., R.A.M.C.

Medical Officer, The Coldstream Guards

Introduction

Unilateral brachial plexus palsy of the Erb-Duchenne type is not uncommonly seen in coalmen (Carter, 1967), the heavy sacks being supported on the shoulders with the arms in the position of full abduction and external rotation. This position is stressed by Wilson (1940). Bailey and Love (1962) note that stretching of the upper part of the plexus is accentuated if the neck is forcibly displaced to the side and the shoulder is excessively depressed. Coni (1966), described two cases of "Pall bearers palsy", when two junior soldiers developed unilateral upper brachial plexus palsies after carrying a coffin on their shoulders. The case of Sergeant A is presented firstly as a further instance of military activity which has unusual features, though with not quite such an esoteric background as Coni's cases. Secondly it shows an aetiology, that of carrying a heavy pack, which might be thought to be more common in causing trouble than it actually seems to be. Finally, the position of head, neck, shoulder and arms as referred to above will all be shown to have been contributory in causing the patient's disability.

Case report

In the summer of 1967 a battalion of Coldstream Guards spent some weeks training in Canada. For some of this time small parties of guardsmen undertook marches of approximately 120 miles, which were covered in seven days. The parties carried their own camping equipment and food.

Sergeant A, twenty-six years old, carried a wireless set in addition to his rucksack. The full rucksack weighed 60 lb and the wireless 30 lb. The rucksack frame balanced on the hips, and straps passed over the shoulders to buckle on to the frame at the waist. The wireless could not be attached to the rucksack and was carried as shown (Fig. 1).

Fig. 1.

Carriage of wireless on rucksack,
showing position of arms.

*Illustration by
Sergeant G. Woollard*

After three days of marching he experienced tingling and numbness in both hands and arms, first on the right side. There was no pain, but arms and shoulders felt weak. He was relieved of the wireless, but carried the rucksack for the rest of the trek; although the weakness worsened the sensations did not change, and apart for his neck aching he otherwise felt well.

Upon arrival at base camp he was found to have partial paralysis of both arms. On the left there was complete paralysis of supraspinatus and infraspinatus, deltoid, brachioradialis and supinator muscles; with weakness of serratus anterior, pectoralis major, latissimus dorsi, biceps and brachialis. He held his right arm in "Erb's" position; paralysis was as in the left arm, and in addition triceps, wrist and hand extensors and interossei were completely paralysed. There was weakness of all the other arm muscles. Sensory impairment to pinprick and light touch was confined to the C 5 and 6 area on the left, and to the C 5, 6 and 7 area on the right. Tendon reflexes were present in the left arm and absent in the right. There was no temperature change in the arms, Horner's syndrome was not present, there was no visceral dysfunction and the arterial pulses were normal.

He was transferred to The Queen Alexandra Military Hospital, where the brachial plexus palsies were confirmed clinically and by electromyograph. X-ray showed an old fracture of the first rib with heavy callus formation, but no other abnormality. Subsequently he was transferred to the Army Medical Rehabilitation Unit, and recovery was virtually complete in three months.

Discussion

Sergeant A carried his wireless set balanced on top of the rucksack, holding it in position for three days' marching. Figure 1 shows how he held his arms fully abducted and externally rotated, this being the position of greatest stretch to the C 5 root as stressed by Wilson (1940). The straps of the rucksack pressed down upon his shoulders, compressing the plexus, and it is noteworthy that on the right side, where his disability was greatest, callus formation due to the old fracture of the first rib would have caused further compression of the plexus. Removal of the rucksack involved depression of the shoulder and lateral flexion of the neck to the opposite side. This was the movement commented on by Bailey and Love (1962). Being right-handed, Sergeant A used to remove the right strap first, and this too might have contributed to the greater trauma on that side. The muscular weakness of the left shoulder and arm implied damage to the C 5 root and upper trunk of the brachial plexus (a true Erb-Duchenne palsy). On the right side the signs implied damage to the whole plexus, but with maximal trauma to the C 5 root and upper trunk.

Summary

A case of bilateral brachial plexus palsy due to trauma from stretching and pressure has been described. Recovery occurred within three months, which showed the pathology to have been neuropraxia rather than neurotmesis.

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Senior Appointments

Major-General A. McLennan, O.B.E., M.B., to be Deputy Director General of Army Medical Services at the Ministry of Defence in July, 1968, in succession to Major-General J. P. Douglas, C.B., O.B.E., Q.H.S., M.B., who is retiring.

Major-General MacLennan was born in Aberdeen in February, 1912 and commissioned into the Royal Army Medical Corps in 1934 after qualifying at Aberdeen University. He commanded field ambulances during World War II and the Korean War, other appointments being Inspector of Army Medical Services from 1964-66 and Deputy Director of Medical Services, Eastern Command.

Major-General R. A. Smart, C.B.E., M.B., M.R.C.P., D.P.H., to be Director of Medical Services, Far East Land Forces in November, 1968, in succession to Major-General J. A. D. Johnston O.B.E., M.C., Q.H.P., M.B.

Major-General Smart was born in Aberdeen on 29th April, 1914, educated at Aberdeen Grammar School and Aberdeen University, where he qualified, and commissioned into the Royal Army Medical Corps in 1936. During World War II he served in the Western Desert, the Middle East and North-West Europe. He was a member of an Army winter warfare study team in the Canadian Arctic in 1948-49, and from 1956-58 led the main party of the Royal Society International Geophysical Year Antarctic Expedition. He has been Director of Army Health at the Ministry of Defence since 1964.

Major-General J. A. D. Johnston, O.B.E., M.C., Q.H.P., M.B., to be Director of Medical Services, British Army of the Rhine in January, 1969, in succession to Major-General T. M. R. Ahern, C.B.E., M.B., who is retiring.

Major-General Johnston was born in Glasgow in February, 1911, qualified at Glasgow University, and was commissioned into the Royal Army Medical Corps in 1933. During World War II he commanded field medical units on the Continent in 1944-45 and was employed in relief operations at Belsen Concentration Camp for several months in 1945. He was Commandant of the R.A.M.C. Depot and Training Establishment from 1964-66 and is at present Director of Medical Services, Far East Land Forces.

Colonel D. G. Levis, O.B.E., M.B., D.P.H., to be Director of Army Health, Ministry of Defence in October, 1968, with the acting rank of Major-General, in succession to Major-General R. A. Smart, C.B.E., M.B., M.R.C.P., D.P.H.

Colonel Levis was born at Brigg, Lincs in December, 1911, educated at Stowe School and Cambridge University, and commissioned into the Royal Army Medical Corps in 1936 after qualifying at St. Thomas's Hospital. He commanded field medical units on the Continent during World War II and later served in Korea and Malaya. Before taking up his present appointment as Deputy Director of Army Health, Strategic Command, earlier this year, he was, for a time, U.K. Army Health Liaison Officer, Australia, Army Headquarters, Melbourne.