51 per cent. of girls, but only 26 per cent. of boys were so favoured.

Medical Examination.—Excluding the lungs, no abnormality worthy of note was found. Experience derived from the examination of many thousands of children has convinced me that the condition of the lungs provides a very useful guide to the degree of physical fitness. The "normal" varies within fairly wide limits, and a close association was found between a decrease in physical fitness and a move to the extreme limits of the normal and beyond.

Menstruation.—Careful note was made of the date of the commencement as well as the character and periodicity of the monthly periods, but no history of any abnormality worthy of record was obtained.

Conclusions

1. Between the years 12 and 15 the physical development of girls is much more rapid than that of boys.
2. Sexual development in girls, with all its attendant disturbances, is very active during this period.
3. This rapid physical and sexual development of girls coincides with a strenuous educational effort.
4. The investigation shows that the standard of fitness of girls was less than that of boys, and depreciated more during the session under review.
5. Home lessons required a greater expenditure of energy by girls.
6. This is a period when the health of girls requires to be carefully guarded.

A NOTE ON THE TREATMENT OF BOILS AND CARBUNCLES

BY

P. K. FRASER, M.B., CH.B.
SURGEON LIEUTENANT R.N.

It is the endeavour of this paper to set out the result of a small recent series of boils and carbuncles treated on board H.M.S. *Hood* by the occlusive method. The dressing used was zinc oxide elastic adhesive bandage (elastoplast) applied directly to the shaven skin and extending well beyond the outer limit of the inflamed area. The surrounding skin was sterilized with 1 in 1,000 acriflavine solution, but no preliminary surgery was attempted.

In a large body of men living under industrial or service conditions the loss of "man hours" involved by intensive treatment of septic conditions is considerable. On board this ship in 1934 of a total of 1,496 fresh cases seen, 156 were due solely to boils and carbuncles. The relation of the latter to all fresh attendances from month to month in 1934 is shown diagrammatically in the accompanying chart.

The Moscow school of medicine regards pyodermic lesions as being the third most incapacitating condition after trauma and "la grippe."

Formerly it was the custom to treat these septic conditions by repeated fomentations, antiseptic applications, and even deliberate surgery. This entailed frequent absence from duty, often confinement to hospital, and the continual attention of a medical assistant, while the resulting disfigurement from bulky dressings and operation scars was often considerable. Newman¹, in 1933, found that when the occlusive method was exhibited to impetiginous lesions in school children the course of the condition was cut short by more than half. Incidentally, the occlusive method is now routine for empetigo in London County Council schools. The cost of medicaments under the old method of treatment was considerable, while the eventual cure seems to have been largely despite rather than due to this therapeutic exuberance.

At the historic meeting of the British Medical Association in Dublin in 1867 Lister propounded the view that damaged tissue should be protected from infection, trauma, and chemical irritation. Yet it was only during the great war that these principles were applied to septic bone surgery by Winnett Orr.² The same principles hold good in minor septic conditions.

A superficial infection in the tissues is followed by localization of the infection and, as pointed out by Celsus, immobility. This is Nature's defence. Necrosis with discharge of pus does not take place till this cycle is complete. Incision at an earlier stage is useless, and may do harm by spreading infection into surrounding parts. Donald,³ speaking from a large experience of these conditions, condemns it, and Walton⁴ is similarly opposed to it. Later, when pus has formed, an incision is permissible, remembering always Macewen's maxim, "An exit can also become an entrance." The pain experienced is often due to movement of a part which has become sympathetically immobilized. Dixon⁵ and Robb⁶ have shown what a great part is played by immobilization in septic conditions, and the latter has shown how even deep-seated sepsis may run a painless course when this has been brought about.

From these remarks it will be seen how widely former treatment departed from the principles laid down by Lister at Dublin, and by Hilton in his almost forgotten masterpiece, *Rest and Pain*.

The multitude of medicated dressings in use shows that no one is specific. Oily dressings have been recently advocated, among them flavine emulsion and cod-liver oil,⁷ but their chief merit seems to lie in their harmlessness. Renewal of dressings is painless on account of their non-adhesive nature. Hygroscopic applications have had their day, among them cane sugar syrup and magnesium sulphate paste; but the disadvantages of the former are obvious, while the latter may cause damage to a devitalized skin.⁸ The use of the discharge itself as a dressing may sound heretical, yet in actual practice it proves most satisfactory. The success of the method as applied to varicose ulcers has long been recognized. Under an occlusive dressing the lesion lies bathed in pus

and separated from the plaster. In this medium granulations rapidly form, and Carty⁹ has observed their rapid growth in three large deep ulcers where previous forms of treatment had been unavailing. There is as yet no consensus of opinion as to the agent responsible for this acceleration of healing under the occlusive dressing.

Results of Occlusive Treatment

The method as applied to this small series has been remarkably satisfactory. Cases have been treated and released for duty immediately, while almost instantaneous relief of pain has been afforded.

A summary of the results can be seen from the accompanying table:

Number of Cases	Average Number of Dressings	Average Number of Days under Treatment
20	2-3	11-12

Only one case received hospital treatment, and that on account of the unique patchwork appearance presented by the multitude of occlusive dressings on his neck. He was treated by the usual method, the dressings remaining untouched as before. One case received adjuvant treatment in the form of colloidal manganese.

Many other septic conditions—for example, whitlows, lymphangitis, ulcers, burns, etc.—have been successfully treated by the method described, but they have not been included in the cases reviewed.

REFERENCES

- ¹ Newman: *British Medical Journal*, 1933, i, 823.
- ² Orr, Winnett: *Ibid.*, 1933, ii, 365.
- ³ Donald: *Ibid.*, 1935, i, 964.
- ⁴ Walton: *Lancet*, 1930, ii, 1073.
- ⁵ Dixon: *British Medical Journal*, 1935, i, 152.
- ⁶ Robb: *Ibid.*, 1935, i, 466.
- ⁷ Strauss: *Deut. med. Woch.*, January 11th, 1935, p. 50.
- ⁸ Schimer: *Amer. Journ. Surg.*, 1934, xxiii, 195.
- ⁹ Carty: *British Medical Journal*, 1935, i, 105.

PRIMARY AXILLARY VEIN THROMBOSIS

BY

A. D. BELILIOS, M.B., B.S.LOND., D.P.H.
HONORARY MEDICAL OFFICER, WIMBLEDON HOSPITAL

AND

A. W. J. HOUGHTON, M.B., B.S.LOND.,
RESIDENT MEDICAL OFFICER, WIMBLEDON HOSPITAL

Thrombosis of the axillary vein, without history of injury or infection, appears to be a rare condition; but only one example can be found in the literature of the occurrence of thrombosis in both axillary veins, and it is for this reason that the following case is described.

Case Report

The patient, a healthy man aged 24 years, is employed as a labourer in an electric lamp factory. He is ambidextrous, but prefers to use his left hand whenever possible. At the time of the first attack he was engaged in delivering the components of batteries from a machine by the use of his left hand and then passing them on to a shelf at his left side. This process necessitated repeated abduction of the arm. About a month before the acute attack he noticed that when lifting a heavy object his left arm felt tense and became swollen and blue. Moreover, if he continued to hold the weight above the level of his shoulder the condition rapidly became worse, but was relieved on adduction of the arm. Suddenly, in October, 1933, during a game of billiards, he discovered that his arm was becoming stiff, swollen, and discoloured; at the same time he experienced giddiness, and fainted immediately on arrival, after two minutes' walk, at his home.

On examination, soon after onset, the whole of the left upper extremity was found to be swollen, cyanosed, and cold, the physical signs corresponding with the second attack as described below. He was treated in hospital by complete rest and immobilization, and made an uninterrupted recovery within three weeks.

The next attack occurred on May 7th, 1935, and involved the right arm, but no history of prodromal symptoms could be obtained on this occasion. In the meantime he had changed his work, which now consisted of shaking lamps after they had been washed and then placing them on a shelf by his side, the process involving the use of both arms. On this occasion he was walking along a road, two days after beginning a holiday from work, when his right arm became suddenly swollen, cold, and blue, and felt first "tight," then "numb." He complained of giddiness as before, and attended an ambulance station, from which he was brought immediately to hospital.

On examination the right upper extremity was swollen and oedematous, the patient supporting it with his left arm. Passive and active movements were limited and very painful. The axillary vein could be palpated as a series of soft and tender swellings. All swelling and oedema of the limb ceased abruptly by a sharp line of demarcation at the level of the clavicle. The pulse was present at the wrist and equal in rate to that of the left side, while the blood pressure was 120/90 and equal on both sides.

He was admitted to a surgical ward, the limb immobilized on a splint, and a dressing of glycerin and ichthyol applied. Within three days the swelling showed considerable reduction, and the patient made a rapid and uneventful recovery. Three weeks later all oedema had disappeared, but distended veins were present in the regions of the anterior axillary fold and back of the shoulder, presumably the development of a collateral venous return.

Nothing abnormal was discovered by the usual pathological investigations, kindly undertaken by Dr. Frank Knott, the Wassermann reaction being negative and the blood calcium 9.2 per cent. The blood count was as follows: red cells, 4,750,000; white cells, 6,020; haemoglobin, 90 per cent.; colour index, 0.95. Differential count: polymorphs, 57 per cent.; lymphocytes, 30 per cent.; hyaline, 9 per cent.; eosinophils, 3 per cent.; basophils, 1 per cent.; platelets, normal. The x-ray appearance of the whole shoulder girdle and cervical and upper thoracic vertebrae was likewise normal.

This case falls into line with those hitherto described by Pearce Gould and Patey,¹ and by B. Horton,² in that the subject was a young healthy male and that the disturbance was probably occasioned by exertion. Moreover, the first attack involved the left arm in a man who preferred to use his left arm. The only left-sided example in Gould and Patey's series was a left-handed man, and occurred while playing golf.

Firth and Mackay³ in 1932 reported a case of axillary thrombosis in a girl, occurring first in the right arm and then, after an interval of eighteen months, in the left. The time interval between the two attacks—in the one case eighteen months and in the other twenty-one months—shows remarkable similarity.

Lowenstein's⁴ theory as to causation appears to be the most satisfactory. He demonstrated that in a number of cases the axillary vein is pressed upon by the costocoracoid membrane and the subclavius muscle when the arm is abducted. And in this case, for some weeks prior to the first attack, swelling could be induced by abduction of the arm. Pearce Gould and Patey demonstrated, by dissection, a competent valve at this point.

The clinical picture of a sudden, painful, and cyanosed swelling of the whole upper extremity in a young healthy adult cannot be mistaken.

REFERENCES

- ¹ Gould and Patey: *Brit. Journ. Surg.*, 1928, xvi, 208.
- ² Horton, B.: *Journ. Amer. Med. Assoc.*, 1931, xcvi, 2194.
- ³ Firth and Mackay: *Lancet*, 1932, ii, 679.
- ⁴ Lowenstein, P. S.: *Journ. Amer. Med. Assoc.*, 1924, clxxxii, 854.