CERVICAL RIB AND HYPERHIDROSIS

BY

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The usual signs that a cervical rib is causing trouble are pain and muscular weakness. It is also generally recognized that in some instances there are vasospastic phenomena which may lead to gangrene of one or more fingers.

A consequence of cervical rib which is not so widely known is hyperhidrosis of the hand; the sweating here may be profuse and very troublesome. In a series of 92 patients on whom I have operated for symptoms of cervical rib there were 81 of the common textbook type. Of the remaining 11 cases, 5 were examples of pressure by a normal first rib, 4 showed predominantly vascular symptoms, while 2 patients complained mainly of profuse hyperhidrosis of the affected hand. Short notes of these two cases are as follows:

Case I

A housewife aged 38 had for some weeks felt an aching and weakness of the right hand, with very profuse sweating. She was right-handed, and her troubles were worse at the end of a day's work. When seen her right hand was normal in colour and temperature, but was covered with drops of sweat, which had saturated the bedclothes where the hand rested. Operation showed a large cervical rib articulating by a fibrocartilage with the first rib at the scalene tubercle. The accessory rib showed clearly the groove in which the lowest trunk of the plexus had rested. Removal of the rib was followed by a rapid and complete return to normal.

Case II

A probationer nurse aged 18 had been perfectly well while working as a typist, but within 6 weeks of taking up nursing she complained of increasing weakness of the right hand, with aching pain and troublesome sweating. She was right-handed, and the cause of her trouble was no doubt the change from a light sedentary occupation to one of physically much heavier work. A radiograph showed a small cervical rib on the right side. At operation this rib was found not to extend as far as the plexus, but was continued as a tense fibrous cord in the substance of the scalenus medius. The lowest trunk of the plexus rested on this cord, and it was seen that with each inspiration the cord became taut and pressed so hard on the lowest trunk that this structure was lifted up with each breath. Division of this fibrous cord, together with section of the anterior two-thirds of the scalenus medius, was followed by prompt and complete recovery.

Commentary

It would seem well-nigh certain that the explanation of these cases of hyperhidrosis of the hand is to be found in the irritation by the cervical rib of those sudomotor sympathetic fibres which are running in the lowest trunk of the brachial plexus. This explanation is in line with that generally accepted for the vascular complications of cervical rib.

Todd (1913a, 1913b) was the first to suggest that these vascular phenomena were the result of irritation of sympathetic fibres. Telford and Stopford (1931) carried his work a stage further by showing that in some individuals the vasoconstrictor fibres passed through the lowest trunk of the plexus as an undistributed bundle, and that this bundle lay directly upon the cervical rib. Given a patient with cervical rib who has this disposition of sympathetic fibres, then the symptoms caused by pressure and friction on the lowest trunk will be predominantly vascular in type. This explanation, although widely accepted, has been challenged by some writers who still believe that the vascular symptoms are to be explained by mechanical interference with the subclavian artery. Be this as it may, mechanical interference with the artery will not explain hyperhidrosis of the hand; whereas the view that the excessive sweating is the result of sympathetic stimulation dovetails very neatly with the explanation of the vascular symptoms.

Sudomotor and vasoconstrictor fibres are known to be intimately associated throughout their course and distribution, and if a leash of fibres containing both types be exposed to irritation by friction or pressure, the factor of their relative

position with regard to the rib will determine whether vasospasm or hyperhidrosis figures more prominently in the clinical picture.

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DESERT SORES

BY

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The following article is in no sense intended to be authoritative or academic. It is merely a collection of views acquired after treating over 1,000 patients for desert sores.

The desert sore is a chronic ulcerative condition of the skin characterized by its tendency to local extension and delayed resolution. It appears in patches of various dimensions from the size of a threepenny-piece to that of a half-crown or occasionally even larger. The ulcers may be single or multiple; the edge is usually irregular in outline. They are roughly divisible into two main types—primary and secondary.

The primary type appears as a spontaneous blister which ruptures and leaves behind a suppurating sore. The secondary type is superimposed on any slight cut, abrasion, or burn. In this connexion it is interesting to note that the skin is far more susceptible to injury in the climate of the desert. The minimum amount of trauma will invariably result in a breach of the skin surface. A not uncommon origin for a desert sore is a simple boil which ruptures and then fails to resolve. Lastly, bites due to fleas, bugs, and mosquitoes occasionally suppurate and give rise to the desert sore.

Aetiology

The aetiology appears somewhat obscure, but certain factors without doubt tend to promote the condition. When the diet is seriously lacking in fresh green vegetables or the equivalents, I have noted a marked rise in the number of sores seen. The adequate provision of a comprehensive scale of rations naturally presents many difficulties in countries such as the Western Desert, where, on the whole, the rations are exceptionally good; but now and again essentials are lacking.

Patients tend to ignore their sores and leave them uncovered in the early stages. As a result, flies, which are very prevalent, tend to spread the condition. In the same way, the contact of sand with the sores tends to make them worse. When water is short, and washing as a result is on a very primitive scale, I find that the impregnation of dirt in the skin will often give rise to blisters, which subsequently become desert sores. General ill-health is usually associated with a profusion of desert sores, but in this connexion I find it difficult to differentiate between cause and effect. Very very occasionally when cases show rapid deterioration I have seen swabbed the sores, and the Klebs-Loeffler bacillus has been found. In my series of 1,000 cases 2 proved to be due to diphtheritic infection.

The condition is almost universal among the troops in the desert, but I find that newcomers are especially susceptible. The fair-skinned men seem to show the greatest susceptibility. An interesting feature is the presence of sores among the Egyptian and Libyan natives, several of whom I have treated. Their response to treatment is no better than that of our troops.

The lesions are, in my experience, seen chiefly on the extremities, and by far the commonest site is the hand. The actual sores are difficult to classify, but I recognize four stages:

(a) A small shallow ulcer with yellow base. The edges are not inverted, but there is a distinct tendency to undermining of the edges of the skin in close proximity to the sore, where pus forms, and eventually the ulcer elongates along these new channels. At this stage the sores are usually painful and tender.

(b) The sore has reached the indolent stage. It fluctuates between partial resolution and extension, and is now usually almost painless. Pus continuously exudes from the lesion.

(c) At this stage the sore becomes flush with the surface of the skin, with exuberant granulations, a dry scab forms, and

the condition seems almost resolved. Then from one corner of the scab pus appears; the scab loosens and is eventually shed, and the base of the ulcer is once again a suppurating sore.

(d) Eventually in a shorter or longer time, which may vary from one week to six months, the sore heals and leaves a permanent purplish-blue scar.

Any of the sores may pass through one or more of these stages, but may remain for an indefinite period in stage *b*.

Treatment

The treatment from the point of view of prophylaxis is naturally the provision of a diet which is comprehensive in all essential material constituents, especially vitamin C. In the Army, ascorbic-acid tablets can be issued on medical recommendation at the scale of one 25-mg. tablet per man daily when the ration is considered to be deficient in vitamin C. This amount of ascorbic acid I prescribe in every case. All cuts and abrasions should be covered in the first instance to prevent access of flies and sand. Sanitation in the field must be of the highest possible order to reduce the fly menace to the minimum.

The general treatment consists in allowing the severe cases to rest from work entirely in the first instance. This may be impracticable, but an attempt should be made to release patients from all but the most essential duties. I find ascorbic acid in larger doses—1 tablet of ascorbic acid (25 mg.) t.d.s.—of considerable advantage. Where it has been possible to obtain tablets, containing all vitamins these have been far more effective. When after several weeks of intensive local and general treatment patients fail to respond, or even show signs of marked deterioration, they have to be evacuated to the base hospital as there is no chance of recovery in the field. Local treatment in my experience has resolved itself largely into the question of "trial and error." Its effectiveness varies from one individual to the next. An agent which effects a rapid cure in one patient may exacerbate the condition in another, and vice versa.

After experimenting with many pastes, ointments, and powders I have found the following agents to be most generally effective:

(i) Powdered sulphapyridine incorporated into paraffin. molle flav. (three 0.5 g. tablets of sulphapyridine to 2 oz. of paraffin. molle flav.). This is applied locally and the dressing renewed after three days. I have tried in a few cases scrubbing the sores with a nail-brush and applying elastoplast over the sore with sulphapyridine paste in direct contact with the sore; the process is painful and has, in my opinion, little advantage over that first mentioned.

(ii) Powdered sulphapyridine applied alone to the sore is sometimes effective, especially in stage *b*.

(iii) Lotio eusol is often helpful in those cases which only partially respond to (i). It often increases susceptibility to treatment with (i) if the patient has applications of eusol for a few days in between treatment with (i). Acriflavine 1 in 1,000 concentration is also in the same way sometimes effective.

(iv) Patients in stage *c* often respond well to pasta flava (pulv. hyd. oxid. flav. 3 parts, pasta zinci oxid. co. 97 parts).

I make it a practice never to persist in the application of any one agent longer than 2 weeks, as the sores seem to acquire a tolerance to it after a while. If a temporary change of agent is adopted for a few days I find that on resumption of the original agent its effectiveness is often increased. This tolerance to a particular agent is a very real one, and when the agent is persisted in I have frequently seen rapid deterioration. The advisability of "ringing the changes" must be carefully considered in cases not showing response to a particular treatment. In the treatment of all sores it is essential that they be completely covered to ensure freedom from contamination with extraneous matter. In the case of the fingers I find the application of splints a great aid to resolution and a distinct deterrent to chronicity.

Illustrative Cases

I have chosen 4 brief case histories which illustrate certain points I have previously mentioned:

Case 1.—A major aged 27, fair-skinned, seen first with five small sores on the fingers. Treatment was given as outlined

earlier in this paper, and while some sores resolved, others remained weeping with no tendency to resolution. At the same time numerous new sores were appearing. After 15 weeks' treatment we reached a large town where diet was both liberal and varied. All his sores disappeared in 5 days.

Case 2.—A captain aged 37, dark-skinned; slow response to treatment. He went on leave to base, where he acquired tab. multivite (B.D.H.), which he took in a dose of 1 tablet thrice daily. He returned one week later with all his sores healed, and he has had none since.

Case 3.—A lieutenant-colonel aged 43, medium complexion, had numerous desert sores which were very resistant to treatment until pasta flava was tried; these rapidly cleared up after three applications. In his case other agents tried caused exacerbation of the condition.

Case 4.—A quartermaster-sergeant aged 28, fair-skinned, seen first with numerous desert sores and widespread furunculosis. All treatment failed and his general condition made removal to hospital essential. He took 3 days to reach base hospital, and on arrival his lesions had entirely healed!

Conclusions

The condition of desert sores is one to which people normally domiciled in a temperate climate are very susceptible while living in the desert. Added to this is the difficulty of maintaining the diet on a basis comprehensive enough to ensure adequate amounts of essential foods and vitamins. Finally, the conditions attendant upon active service render adequate treatment difficult and the follow-up of patients is of a standard which compares unfavourably with what one might desire.

Medical Memoranda

An Obscure Cause of Haematemesis

A fatal case of haematemesis due to ingestion of foreign bodies seems worth recording, in virtue not of the nature of those bodies but of their location at necropsy.

CASE REPORT

An undersized and under-developed girl aged 16½ was admitted to the Worcester Royal Infirmary on July 29, 1941, having been ill for 5 days with pain in the lower part of her back severe enough to keep her in bed. It was noticed that she showed a morbid interest in her complaint. There was a history of pyelitis some years previously. On admission she was vomiting green fluid and there was tenderness in the left lumbar region of the abdomen; the urine was, however, without obvious abnormality. The temperature was 100.6° and the pulse rate 96. A tentative diagnosis of perinephric abscess was made and conservative treatment initiated. Thirty-six hours after admission the patient suddenly became restless and complained of thirst; she shortly afterwards started vomiting blood, some 20 oz. being lost over a period of several hours. In spite of restorative measures she deteriorated rapidly and died 5 hours later.

At the post-mortem examination, held 24 hours afterwards, the stomach was found to be distended with recent blood-clot, but there was no evidence of either gastritis or gastric ulcer. The spleen was normal in appearance. The pancreas was much enlarged, and on opening it a haematoma the size of an orange was seen to occupy most of the head and body of the organ. This haematoma showed organization at the periphery, but in one point there was a commencing abscess cavity. A sharp object was accidentally located in the haematoma; this proved to be a sewing-needle. On further exploration two other needles were found, half the eye of one of them being missing. The duodenum was then opened, and at the junction of the middle and distal thirds on the mesial wall an ulcer was found in, direct communication with the pancreatic haematoma; it was rounded and admitted the tip of the little finger; the edges were injected, but the walls were not indurated. On opening the splenic artery a small haematoma was seen in its wall. This artery had apparently been penetrated by one or other of the needles, thus giving rise to the fatal haemorrhage, for the artery had presumably bled into the intrapancreatic haematoma already present, and the haematemesis was due to the passage of blood through the perforation of the duodenum into the stomach. On opening the intestines a fourth needle was encountered at the hepatic end of the transverse colon; it was embedded in the substance of the transverse mesocolon close to the bowel wall. This needle had presumably perforated