PROGRESSIVE POST-OPERATIVE GANGRENE OF THE SKIN

BY

A. J. BLAXLAND, M.S., F.R.C.S.

HONORARY SURGEON, NORFOLK AND NORWICH HOSPITAL

The dramatic in surgery is not confined to the extirpation of enormous growths by skilful operation, but embraces also certain conditions which would terminate fatally but for minor surgical intervention. When a lethal process of this nature is in itself a complication of a previous operation a successful issue is doubly gratifying to the surgeon. Such a condition is progressive post-operative cutaneous gangrene. It is comparatively rare, but it is extremely serious if not recognized in an early stage. Although two cases have recently been described in the *British Journal of Surgery*, I think it advisable again to draw the attention of the profession to its existence by recording two cases which have come under my own care.

The first of these occurred sixteen years ago. The fatal nature was not recognized until too late, and the patient died. In the second, a recent case, the diagnosis was made early and appropriate treatment instituted with immediate and successful response. The first account of this condition to be published in England appeared in an article by F. Hector Scotson¹ in the *Lancet* of January 14th, 1933, a case successfully treated by excision being recorded. So far as I can discover only two other cases have been reported in this country—one by H. J. Nightingale and E. C. Bowden² in the *British Journal of Surgery* of October, 1934, and the other, in the same journal, in April, 1935, where there is an excellent description of the lesion by A. M. Stewart-Wallace,³ with a full bibliography and an analysis of the thirty-seven other cases which have been reported up to date. I take this opportunity of acknowledging my indebtedness to the authors of these publications. It was to a large extent due to these that I recognized the nature of my second case at an early stage, and carried out the treatment recommended by them.

Symptomatology and Treatment

This unusual gangrenous infection involves the skin only. It occurs as a post-operative sequel—in most instances commencing in a suture puncture, and in the great majority of the recorded cases it has followed drainage operations for appendix abscess or for empyema. The infection in the skin spreads slowly but relentlessly, the advancing edge being a very tender bright red zone about one-eighth of an inch wide, leaving behind it a narrow rim of adherent slough, which forms the border of an extending ulcer. As a rule the infective agent appears to be a combination of an anaerobic streptococcus with a staphylococcus.

Treatment by antiseptics, or by serum, whole blood or vaccines, or by physiotherapy, or by a combination of these, has apparently no appreciable effect in delaying the spread of the gangrene, and unless excision of the infected skin is carried out the ulceration will continue to extend over a very wide area of the body, and the patient will die of exhaustion after months of suffering. The excision is preferably carried out with a diathermy knife rather than with a scalpel. By this means loss of blood is reduced to a minimum, and the lymphatic spaces are sealed off.

As an alternative, or as a supplement to excision, a gutter can be made with a diathermy knife through the healthy skin all round the margin of the ulcerated area with a view to forming a barrier to further advance of

the infection. The raw area rapidly becomes healthy after excision of the gangrene and soon commences to epithelialize.

Case Records

Case 1.—J. G. R., a man aged 62, a patient of Dr. Skrimshire of Holt, developed pneumonia at the end of August, 1919. On September 9th he was seen by Dr. Cleveland, and pus was withdrawn from the right chest. On September 10th two inches of the eighth rib were resected in the posterior axillary line, and a large empyema drained. The tube was removed on September 19th and the cavity irrigated daily. On October 7th the temperature, which had been normal since the operation, began to rise. This continued, and on November 5th a further portion of the eighth rib was resected, and a loculated collection of pus in the pleural cavity was evacuated and a drainage tube stitched in. On November 12th infection of the stitch holes was noticed. By November 25th the infection of the stitch holes had spread to the wound edge, and there was now a septic ulceration of the skin, with a thin sloughing edge all round the wound. The empyema cavity had healed, a staphylococcus being isolated and later on a streptococcus.

All kinds of antiseptic dressings were tried without avail, also a course of autogenous vaccine. The general condition remained fair, but the phagedaena of the skin continued to spread—a thin sloughing edge with a bright red tender border—and by January 10th, 1920, the ulcerated area was the size of two hands, and had spread to beyond the middle line of the back. Excision was discussed at this time, but was considered to be too drastic. The ulcerating margin continued to spread until the skin had disappeared from the whole of the back—from the occiput down to the sacrum—and the patient mercifully died from exhaustion nine months after the commencement of the infection.

Case 2.—A. N., an unmarried woman aged 49, was taken ill with appendicitis on November 1st, 1934. She was first seen by her doctor, Mr. Tracey, on November 5th, and on the same day he operated and removed a gangrenous appendix and drained a collection of pus. Her local abdominal condition gradually settled, but pyrexia continued, and she developed a right subphrenic abscess. I saw her first on December 9th. The general condition was good. The temperature was 101° F. The right upper abdomen was somewhat full. The heart's apex beat was in the fourth left intercostal space, four and a half inches from the mid-line. There was dullness on percussion over the front and back of the right chest. X-ray examination showed that the right dome of the diaphragm was raised. On December 10th operation was performed. Two inches of the eighth rib in the mid-axillary line were resected.

The pleural cavity was opened, a little clear fluid escaped, and the parietal pleura was sutured to the diaphragmatic pleura. The diaphragm was incised, a collection of pus beneath it evacuated, and a drainage tube was inserted. The pus grew streptococci on culture.

On December 21st a further collection of pus under the medial part of the right diaphragm was drained after resection of a portion of the sixth right rib anteriorly. The general condition improved after this, but the drainage sinuses did not heal, and there were occasional bouts of pyrexia followed by increased discharge from the lower sinus. On April 4th, 1935, a fluctuant swelling appeared in the right loin. This was incised, and a large abscess cavity connected with the lower drainage sinus was opened and drained. A drainage tube was fixed in position with a silkworm-gut suture. Three days later a carbuncular process appeared around the suture holes of the drainage tube. The inflammation gradually spread in the skin, destroying the skin in its progress, so that a fortnight later there was a raw granulating area two inches in diameter, with the drainage sinus in its centre. The ulcerating edge of skin all round this area showed a thin

edge of gangrene, and beyond this a thin bright red tender area, which advanced almost imperceptibly each day.

On April 20th, under gas and oxygen, the inflamed gangrenous edge was excised with a diathermy knife, and in case this procedure might not prove to be sufficient to eradicate the infective process in the skin, a deep gutter was made through the whole thickness of the skin with the diathermy knife, a quarter of an inch further out, all round the ulcer, and in obviously healthy skin. After this the wound rapidly became healthy. Healing soon began to take place, the granulating area epithelialized satisfactorily, and the patient left the hospital on July 2nd.

A photograph taken six weeks after the excision of the skin (see Figure) shows a healthy granulating wound (the dark area); around this is the newly formed skin, and beyond this can be seen the healed gutter in the skin.

REFERENCES

- ¹ Scotson, F. H.: *Lancet*, 1933, i, 80.
- ² Nightingale, H. J., and Bowden, E. C.: *Brit. Journ. Surg.*, 1934, xxii, 392.
- ³ Stewart-Wallace, A. M.: *Ibid.*, 1935, xxii, 642.

PERSISTENT HEADACHE DURING LACTATION

WITH REPORT OF FIVE CASES AND COMMENTARY

BY

JULIUS H. BEILBY, M.B., B.Ch.

SURGEON TO THE RUTSON HOSPITAL, NORTHALLERTON

The cases reported below describe a persistent headache associated with the nursing period, which characteristically disappears on weaning. Of varying severity, it is usually frontal, being described as "behind the eyes"; but it may affect the whole head, with spasms referred particularly to the occipital region, commencing typically at or after the first week of puerperium. None of the cases were primiparae: second or third pregnancy was commonly the rule. No pathological basis was traceable for this symptom. Pregnancy and parturition were normal; the urine was normal before and after confinement, except in Case II, where there was a trace of albumin during the later months, which happened to be hot summer ones, and probably discount it. There was no rise in blood pressure during the puerperium; the fundi were normal. There was no uncorrected visual defect. Except in Case IV, there was no anaemia. The bowels were regular. In Case III there was gross dental caries, and this was thought to be a possible cause of the symptom. But the headache disappeared on weaning, and the dental condition is still waiting attention. In Case IV there was a considerable anaemia before term, and the same patient had alopecia areata affecting almost the whole scalp.

In these days of active ante-natal therapy most will agree that much can be done before confinement, both for the mother and for the baby, by suitable diet, supplemented if necessary by an artificial supply of vitamins A and D, in the form of radiostoleum or adexolin, and iron; and even calcium by mouth, whatever may be its fate in digestion, appears to have some value. Four of these patients were women in poor circumstances, in whom adequate ante-natal therapy was not a possibility; that is to say, drugs such as radiostoleum would have been a serious item in their weekly budget, and advice to persevere with an extra supply of milk and iron-containing foodstuffs in their diet was only likely to be carried out spasmodically. Further, a ten days' puerperium was about all they could manage.

While naturally without statistics it does not constitute any proof, it is at least suggestive that inquiry has not elicited, nor in my own experience have I seen, a case of

such headache occurring where careful ante-natal supervision has been possible. Such headaches are uncommon. My series covers a period of six years, and by including all the cases I have attended or had access to the percentage is 1.3, while probably the true figure is well under 1 per cent.

In treatment of this symptom it seemed advisable to use drugs with circumspection with the baby at the breast; but in all a considerable number were tried, with at best temporary effect. Phenacetin and caffeine afforded temporary relief in two cases, and radiostoleum, or rather lack of it, appeared to have some effect in one case. Probably rest, a suitable diet, and drugs directed at improving the patient's general condition would have effected some improvement. Circumstances, however, made weaning the alternative in the only case in which I have been able to apply the test since forming a conclusion.

It is easy to be wise after the event, and, seen in retrospect, the solution must appear obvious. But actually at close quarters it was not until the fourth case of the series that the probable cause suggested itself. There is little reference to such a condition in the literature, yet fellow practitioners with whom I have compared notes can most of them recollect one or more cases in their experience which probably come into this category, though, like myself, they had attached little importance to them after they had cleared up.

Case I

Mrs. A., aged 43, fifth pregnancy. Delivered July 22nd, 1929. Very poor home conditions in London. Normal pregnancy and easy delivery, with short second stage. The puerperium was uneventful, and it was with difficulty she was persuaded to stay in bed twelve days, as she badly needed a rest. But on the tenth day she sat up out of bed, and when seen on the twelfth day complained of a severe headache "behind her eyes," which had started on the tenth day. Her temperature and pulse were normal, and she gave in no way the impression of being toxæmic. She was well in herself, but slept badly, as the headache usually kept her awake until about midnight. No physical cause was found for the symptoms. The bowels were normal, also the urine; there was no rise in blood pressure. The fundi were normal. She wore spectacles, but her refraction was tested and found to be correct. The teeth were false, and there was nothing clinically to suggest a sinusitis. She was given a phenacetin-caffeine mixture, which afforded some temporary relief and helped her to get off to sleep. But the headache returned consistently about midday, and persisted until she fell asleep at night.