

blood pressure was 130/100 mm. Hg, and auscultation of the heart did not reveal any abnormality.

Left Lower Limb.—The colour was normal, active movement was present only in the left great toe, the left common femoral pulse was present though small in volume, but the posterior tibial and dorsalis pedis pulses were absent. The skin was anaesthetic as far up as the lower abdomen and was cold from the knee downwards. The knee and ankle reflexes were absent.

Right Lower Limb.—The leg was pale from the knee downwards; there were no active movements and the common femoral pulse was absent. The skin was anaesthetic as far up as the middle third of the thigh and was cold from the knee downwards. The reflexes were absent.

Five hours after the onset of the illness there was no change in the right limb, while in the left full movement had returned and the only abnormalities were absence of the posterior tibial and dorsalis pedis pulses and coldness of the skin below the mid-shin, including the foot. Two hours later the skin above the left ankle was still cold, while the thigh and foot were warm. There had been full recovery of movement in the right limb, and the common femoral pulse was now present and was larger in volume than the left; coldness was found on the dorsum of the foot and as far as the knee, while the toes were warm. Oscillometer readings were as follows:

	Thigh		Calf	
	Right	Left	Right	Left
180 mm. Hg	3½	1	2½	1½
160 " " " " ..	5	1	4	1½
140 " " " " ..	5½	1½	5	1½
120 " " " " ..	5	2	6	1½
100 " " " " ..	4½	1½	6	1½
80 " " " " ..	3	1	5	1½

The areas of coldness showed no further change until 14 hours after the onset, when the whole of the right foot was warm, but coldness of the skin above each ankle remained for several hours longer.

The following day the limbs were normal except for the difference in common femoral pulsation. The blood pressure had risen to 260/140, but the patient was cyanosed and breathless, and he died 48 hours after the onset of the illness.

Limited Necropsy.—A dissecting aneurysm started in the first part of the aorta, involved the abdominal aorta, and extended as far down as the middle of the right common iliac artery. There was a large atheromatous plaque in the right common iliac artery at the same level as the lower margin of the extravasated blood. The left common iliac artery was normal. The dissecting aneurysm extended about one-third of the way round the ascending part of the aorta and a quarter of the way round the right common iliac artery. There was a large collection of blood in the pericardium and of blood-stained fluid in the left pleura.

A large fibrotic area was present in the mid-posterior zone of the heart, due to an old coronary thrombosis, and there was advanced coronary atheroma, particularly of the anterior descending branch. No evidence of a recent infarct was found. The middle of the aorta and the femoral arteries were not examined.

Discussion

The difficulty in diagnosis of the vascular cause of sudden pain and paralysis in a limb is the element of arterial spasm which may occur both in embolus and in dissecting aneurysm; a dissecting aneurysm may also directly interfere with the blood supply of the spinal cord. The only constant findings in embolus are absence of the peripheral pulse, lowered surface temperature, and pallor (Allen, Barker, and Hines, 1946). The initial physical signs suggested an embolus completely blocking the right common iliac artery and partially blocking the left, but the fact that symptoms on the left preceded those on the right by

half an hour made this unlikely, and rapid and marked improvement of the condition of the limbs finally excluded embolus and ischaemia of the cord.

The changes in the surface temperatures over different parts of the lower limbs merit emphasis. In both limbs the last area of skin to warm up was not over the foot but over the area surrounding the leg just above the ankle. This area remained cold for some hours while the foot and calf were warm. Dr. John Homans told one of us (H.S.S.) that it was not uncommon after anaesthetizing the lumbar sympathetic ganglia to find the first area in the limb to warm up is behind and above the malleoli, a reaction which takes place well in advance of the temperature changes in the toes. The delayed vasodilatation in the area of skin proximal to the ankle in this case and the early vasodilatation in the same area following lumbar sympathetic block point to a peculiarity in the arteriolar pattern which may be related to the formation at this site of ulcers that are variously labelled varicose, post-phlebotic, or gravitational.

Summary

In a case of dissecting aneurysm of the aorta there was marked spasm of the lower limb arteries, with coldness and paralysis of the legs simulating embolism at the aortic bifurcation. In the recovery phase the last portion of the skin in each leg to become warm was a localized area of the skin just above the ankle. It is suggested that there may be an exceptional vascular arrangement at this site, possibly related to the occurrence of ulcers of the legs.

We are grateful to Dr. G. F. Fowler and Dr. C. V. Light for their help with this case.

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Medical Memoranda

Case of Erysipeloid of Rosenbach Treated with Penicillin

Infection of human beings with *Erysipelothrix rhusiopathiae* is by no means common. It is, however, to illustrate the response of this infection to penicillin therapy that the following case is described. Few cases treated with penicillin have been recorded in this country; Barber, Nellen, and Zoob (1946) reported five cases, all of which responded well to penicillin. In America three cases have been reported (Ehrlich, 1946; Ferguson *et al.*, 1947; Stiles, 1947). All these cases showed a rapid response to penicillin. The progress of the disease untreated is slow and may be anything from one to five weeks, during which time complications may arise. Other treatment is of little or no value: the organism is not sensitive to sulphonamides, and serum therapy is uncertain and often gives rise to severe reactions.

CASE REPORT

The patient, a man aged 34, is a veterinary surgeon engaged on research. Two days before attending he had been dissecting turkeys which had died of *Erysipelothrix rhusiopathiae* infections and from which the organisms had been cultured. During the dissection, not wearing gloves, he pricked himself on the left thumb. He presented with a typical lesion in that region. The skin over an area about 1 in. (2.5 cm.) in diameter was red, raised, and shiny, and the edge was sharply demarcated. Pruritus was marked and there was considerable pain and throbbing. Axillary adenitis was present, but there was no lymphangitis.

The arm was put in a sling and kaolin poultices were applied. Penicillin sodium, 100,000 units intramuscularly, was given twice daily. The improvement in 24 hours was marked, and in 48 hours the thumb appeared normal. The patient defaulted after five injections, however, and attended again two days later. The lesion then measured 2 by 1½ in. (5 by 3.75 cm.); it was extremely painful and typical of the condition. Both lymphadenitis and lymphangitis were present.

Penicillin therapy was restarted, the dosage being increased to 250,000 units intramuscularly twice daily. In 48 hours there was a great improvement, and in 72 hours there was only a small area of erythema and no induration. Penicillin was continued for a further four days, after which the lesion had completely subsided.

COMMENT

The diagnosis was quite definite clinically in view of the history, the typical incubation period of two days, and the typical lesion. Demonstration of the organism requires biopsy, which was not considered justifiable. There were a dramatic response to penicillin, a rapid recurrence after inadequate therapy, and a further rapid response on restarting treatment. The appearance of the disease in turkeys is most unusual and has not been reported in this country before. The organism may therefore have been a particularly virulent one. It was shown, however, to be penicillin-sensitive on culture.

The case demonstrates a rapid response to penicillin in a case of erysipeloid, and the need for full doses of penicillin for an adequate period.

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Imperforate Anus and Congenital Rectal Fistulae

Imperforate anus is said to occur once in every five or six thousand births; it is complicated by recto-urethral or recto-vaginal fistula about once in every 50,000 births.

IMPERFORATE ANUS

This condition may vary from a simple membranous occlusion to a large gap which it is difficult to bridge by surgery.

Case 1.—A male European child aged 12 hours was referred to me as a case of imperforate anus. On examination it was seen that although the anal depression was present the anal passage was not patent. A bulging membrane occluded the canal. This membrane was incised and faeces immediately poured out. Dilators were passed to complete the opening. This case was simply a failure of the anal membrane to disappear. It is probably the commonest form of imperforate anus and is certainly the simplest to relieve.

Case 2.—A female Tamil child aged 12 hours. The child had vomited, and the mother said there had been no bowel movement since birth. On examination there was a normal anus; the anal canal admitted a probe for a distance of half an inch (1.25 cm.) and was then stopped by a membrane. *Operation:*—An attempt was made to rupture the membrane with a myringotomy knife. No faeces appeared. A perineal opening was then made, but there was no sign of the rectum. A lower midline laparotomy was performed, and it was seen that the rectum ended at the upper end of the sacrum. There appeared to be no opening in the pelvic floor for the bowel. Working from above and below, a loop of sigmoid colon was brought through an opening made in the posterior pelvic floor. The loop of colon was opened and stitched to the dilated anal canal, the upper end of which had been cut to

receive it. The abdominal incision was then closed. The child recovered without incident.

IMPERFORATE ANUS WITH FISTULA FORMATION

Case 3.—A male Malay child aged one and half months. Since birth both urine and faeces were passed through an opening at the peno-scrotal junction. There was no sign of an anus. *Operation:*—A small probe was passed into the sinus. A midline perineal incision about 1 in. (2.5 cm.) long was then made back to the tip of the coccyx. This incision was deepened. By feeling for the probe the fistulous track was found and the rectum searched for. It was found to end about 1½ in. (3.75 cm.) above the perineal skin surface and could not be drawn down. An opening was made in the lowest part of the rectum and a piece of soft rubber catheter tied in and brought through the perineal opening. The sinus was not ligated. Finally, a drain was put in just in front of the coccyx. The child passed a little faeces through the perineal drain for a few days, but this stopped and the fistula once again acted as a cloaca. It was decided to leave further attempts at closure until the child is old enough to stand the extensive procedures involved.

This case was due to failure of the urorectal septum to unite completely; the paramesonephric ducts were also involved. It is notable that the penile urethra was found to be patent. The case shows well the difficulty in treating high rectal occlusion. It would have been impossible even to open the rectum if the peritoneum had been traversed. A perineal anus could probably be made for this child at a later date by using pelvic colon, as it is unlikely that the rectum could be brought down. The remaining problem is that of sphincter function: should one make a perineal anus which may be uncontrollable?

Case 4.—A female Malay child of 5 months. Examination showed a perforate hymen and an opening in the posterior vaginal wall in the midline. Faeces were seen to come from this opening, and the mother stated this had been occurring since birth. *Operation:*—A midline perineal incision was made. The blind end of the rectum was found about ¼ in. (1.9 cm.) above the skin level. It was easily brought down and opened. The edges of the opening were stitched to the edges of the perineal incision. This child ceased to pass faeces into the vagina 48 hours after operation, although the fistula was not ligated.

The embryological fault here was an opening in the urorectal septum which also penetrated the paramesonephric ducts. This operation was completely successful, but as no evidence of a sphincter was seen it is doubtful if there will be a reasonable degree of control. According to Keith (1908) there is always an anal sphincter muscle present in cases of imperforate anus. This may be so, but it was not found in Cases 3 or 4, although it was present in Case 1. From the practical viewpoint it seems unlikely that there will be useful sphincteric action of the anus in the more severe degrees of maldevelopment. It is interesting to note that in neither of the cases with fistula was there any evidence of infection.

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In the 10-year period 1939–48 there were 12 cases of chronic benzene poisoning with 8 deaths, and 20 cases of toxic anaemia due to benzene with 5 deaths, reported to the Chief Inspector of Factories. Over the same period there were 519 gassing accidents with 31 deaths caused by substances in use as industrial solvents. These and other figures were discussed by Dr. A. J. Amor, president of the Association of Industrial Medical Officers, in a paper read at the Chemical Works Safety Conference which was held at Scarborough from October 7 to October 9. Other subjects discussed at the conference were the installation and maintenance of breathing apparatus and training in its use, and the types of electrical apparatus permissible for use in hazardous atmospheres.