

The closed abdomen is revealed in the new light of twentieth century science.

COMMENT

DR. W. M. CARR (Victoria, B.C.). Discussion of Dr. Prowd's paper is pleasant and, bearing in mind his subject, illuminating. That our field of endeavour is broadening and improving is well shown by the maintained and increasing interest in x-ray diagnosis on the part of those pathologists with whom I have worked. I mention the pathologist as he is liable to be satisfied that his specialty is the only one which from a diagnostic point of view is of real value.

X-ray examination is a most useful agent in preventive medicine. At first one's greatest pleasure is to find a definite lesion which when treated relieves the patient of symptoms. Later one feels most pleased when major lesions are ruled out and by elimination it can be shown that a relatively minor cause exists such as tonsillar, paranasal, peri-dental or other readily accessible focus of infection.

How very frequently the epigastric area is positively demonstrated as the storm centre of various extraneous bodily ills, organic lesions being ruled out from stomach, duodenum and gall-bladder. It would seem to be a fact that the incidence of gastric and duodenal ulcer (particularly the former) is much lower than previously believed and also that this varies in different parts of the country.

It is pleasant to note that, characteristically, Dr. Prowd has not concluded that uroselectan replaces other methods of urinary tract examination. There does not at present seem to be reason for believing that this substance can replace the use of sodium iodide or bromide as previously employed, although it does give additional information *re* function.

Speaking generally, those working with x-ray and radium are of value in direct proportion to their experience. Hence the point that they be conserved for long periods of activity seems to me to be well taken.

I do not think the use of oxygen or carbon dioxide intraperitoneally should be omitted in selected cases. Inducing pneumo-peritoneum is a safe method of examination if certain definite contra-indications are avoided. When the trans-abdominal route is chosen one should avoid inserting the needle into a large blood vessel, a blood vessel over-lying a mass or held by adhesions, or into the bowel held by adhesions. Examination with the aid of an opaque meal is sometimes necessary in order to find a safe location as when there has been a laparotomy. When the uterine route is selected one must be sure of a clean cervix and uterus and avoid pressure in excess of 220 mm. Hg.

Knowing the history and progress of our work one cannot fail to agree that opportunity, endeavour and time will show the increasing usefulness and scope of x-ray work.

## Case Reports

### A CASE OF CANCRUM ORIS FOLLOWING TYPHOID FEVER; WITH PLASTIC REPAIR\*

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The prognosis of these gangrenous lesions of the skin is so poor that it seemed of interest to report a case which made an excellent recovery and was left with a good cosmetic result following a successful plastic repair operation. Circumscribed gangrene of the skin in other situations than those threatened by bed-sores occurs with extreme rarity and only in greatly reduced individuals, and it is then of ominous significance. Abt<sup>1</sup> describes cancrum oris as a specific infectious disease of the tissues of the mouth caused by the symbiosis of Vincent's spirochæte and the *B. fusiformis*, and characterized by ulceration and gangrene of greater or less extent and depth. It seems to require for its development a decided lowering of the general resistance, combined perhaps with an especial neglect of the teeth. It is more likely to develop after typhoid fever than after any other disease,

except measles. Based upon tables of 1,700 cases of typhoid fever, Keen<sup>2</sup> noted the presence of noma 9 times; 5 of the 9 patients died, and the result in one is unrecorded. Adams<sup>3</sup> noted cancrum oris in 4 cases, all fatal, in a study of 337 cases in children. In a later study of 550 cases, he<sup>4</sup> noted 5 cases of ulceration of the mouth, only one being gangrenous. Morse<sup>5</sup> in a similar study of 284 cases notes no complications of the mouth. There were similar findings by one of us<sup>6</sup> in a study of 175 cases in children. Among the large number of cases that came under Osler's<sup>7</sup> observation he only saw one case in a child that could be considered as noma.

During the World War, at the British Isolation Hospital in France<sup>8</sup> during the first two years of its existence, there was only 1 case of noma, and this fatal, in 1,118 cases of typhoid fever. Soisa<sup>9</sup> described two cases of noma complicating typhoid fever, only one of which recovered. The fatal case was that of a girl of 15 years, who had been ill three weeks before admission to the hospital and died two weeks later of a terminal broncho-pneumonia. She developed a noma of the cheek about ten days before death, and was given four intravenous injections of salvarsan with no improvement. The other case was that of a girl of nine years

\* From the Children's Memorial Hospital, Montreal.

who developed a noma of the right cheek during the third week of a severe attack of typhoid fever. There were also ulcers over the thorax and abdomen, especially along the course of the intercostal nerves. Three intravenous injections of neo-salvarsan were given at 5-day intervals with no improvement. The noma extended to the other cheek, and involved the left superior maxillary bone. The ulcers on the thorax and abdomen spread. The author then tried a 10 per cent copper sulphate solution locally, and used 5 per cent as a spray to the throat twice a day. It had been previously shown by others that this prevented the development of the fusiform bacilli. However metastatic gangrenous areas appeared over the body and a 10 per cent calcium solution was given intravenously daily, to stimulate phagocytosis, and for its antitoxic properties. On the second day after this treatment arrest of the process was noted, and on the 15th day the patient had sufficiently improved to be transferred to the surgical department, where a plastic repair was done on the cheek. This author disapproves of cauterization for fear of spreading the infection. He advises copper-calcium treatment, or copper-neosalvarsan, according to the type of bacteria predominating. Berger<sup>10</sup> describes a case of gangrenous stomatitis in an infant aged 16 months, which did not follow any other illness. The gangrenous area was extensive, involving more than one-half of the right cheek, and the angle of the mouth. There was also sloughing of the gums. Three intravenous injections of neoarsphenamine were given over a period of 10 days. Potassium chlorate was given by mouth in a dosage of 5 grains 5 times a day. The mouth was cleansed with hydrogen peroxide followed by tincture of myrrh. Ten per cent silver nitrate was applied twice. A definite line of demarcation ultimately formed and the gangrenous area was removed by cautery. The patient made an uneventful recovery. A small amount of fibrous contracture was left about the angle of the mouth. Noma has also been described in the new-born by Benedict.<sup>11</sup> Melzer<sup>12</sup> described the good effects of insulin injections in a child with noma. A somewhat similar case to ours, with recovery, and subsequent repair of the defect by a plastic operation, was described by Goodall<sup>13</sup> recently. Most of the recent pædiatric text-books agree in advising early and

wide excision of the noma, with cauterization of the edges.

#### CASE REPORT

The patient was a boy, 4½ years of age, who was admitted to the hospital on November 26, 1930, on about the 16th day of a very severe attack of typhoid fever. He was one of a family of eight children, seven of whom became ill with a very severe form of typhoid fever, with unusual complications, and four of whom died. Suffice it is to say here that this child on admission presented a very poorly nourished appearance, appeared very drowsy and ill, and had a severe cough. The lips were excoriated and dry, the tongue dirty and coated, the breath foul, and the tonsils very large and congested, with considerable mucus in the throat. Numerous moist râles were heard all over the chest. The liver and spleen were palpable, and there were scattered rose spots over the abdomen. On November 28th, two days following admission, moderate swelling of the right cheek, with a small black ulcerated area on the inside of the cheek, was noticed. A direct smear showed what appeared to be Klebs-Loeffler organisms, in association with other bacilli, diplococci and cocci in chains. A report, three days later, on the throat culture was negative for Klebs-Loeffler bacilli. Because of the history of three brothers dying of laryngeal diphtheria complicating

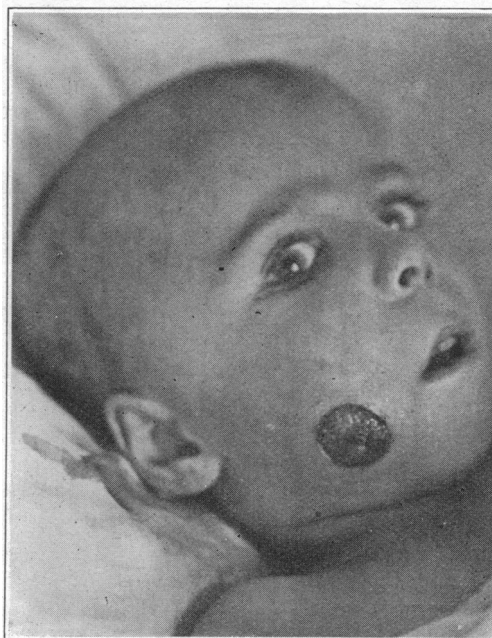


FIG. 1.—Pre-operative condition on November 30, 1930.

typhoid fever, he was given 1000 units diphtheria antitoxin. He was also given 0.15 gr. of novarsenobenzol intravenously; the affected area was painted with a solution of novarsenobenzol every four hours, and hot fomentations were applied. The ulcer kept enlarging on the inside of the cheek, and on November 30th, he was given 0.2 gr. novarsenobenzol intravenously. On December 2nd, the ulcer opened on the inside. There was not much pus, but a large amount of necrotic tissue was visible. The following day the cheek began to discolour on the outside, and a small area of necrosis soon appeared. On December 4th, this necrotic area had enlarged to nearly 2 cm. in diameter (see Fig. 1). A smear from the ulcerating edge showed spirochaetes and fusiform bacilli in greater numbers. On December 6th, the necrotic mass was excised, under light ether anaesthesia, the excision extending well beyond the outer limit of the necrosis, the margins were then cauterized, as was also any gangrenous tissue inside the mouth. Subsequent to the excision sponges soaked in gentian violet and acriflavine, of each 1 per cent, were packed into the opening, alternately with sponges soaked in novarsenobenzol.

December 13th, as there was no improvement in the appearance of the wound, it was decided to discontinue the novarsenobenzol, and concentrate on the use of gentian violet and acriflavine, the latter being applied, both by means

of packs and with a syringe along the gums. By December 19th, there was a definite improvement in the child's condition, the temperature being normal, the pulse 100 to 110. The wound itself looked cleaner, and there was no further extension of the gangrenous process. On December 27th the gentian violet and acriflavine were discontinued, as the gangrenous process appeared to be overcome. The bone of the lower



FIG. 3.—The tube graft on February 8, 1931.



FIG. 2.—Post-operative condition on December 19, 1930.



FIG. 4.—The tube filling the defect.

jaw was exposed, and there was a purulent discharge from this, and from the gums and cheek. Moist dressings were therefore applied every four hours for ten days, when the discharge had ceased, with the exception of that from the bone. This latter stopped after the removal of a small sequestrum January 15, 1931.

On January 23rd, the first step in a plastic repair of the defect in the cheek was undertaken. This consisted in making a flap of full thickness on the anterior chest wall, running in an oblique direction down towards the xiphoid of the sternum. Ten days later the flap was tubed (see Fig. 3). On March 3rd it was freed at the distal end from the chest wall, and on April 14th, as the vitality of the graft appeared to be excellent the defect in the cheek was plugged by swinging the distal end into the opening, and suturing it in this position (see Fig. 4). The opening on the buccal side was lined with skin from the graft. On May 9th, the graft was disconnected subsequent to the application of an elastic band for forty-eight hours. It was cut straight across at the junction of the middle and distal third, the redundant tissue removed, and the skin of the graft sutured flush with that of the face. The ultimate cosmetic result is as shown in Fig. 5. Nothing was done to remedy the fibrous ankylosis of the jaws, other than freeing adhesions at the last stages of the grafting. The patient is now able

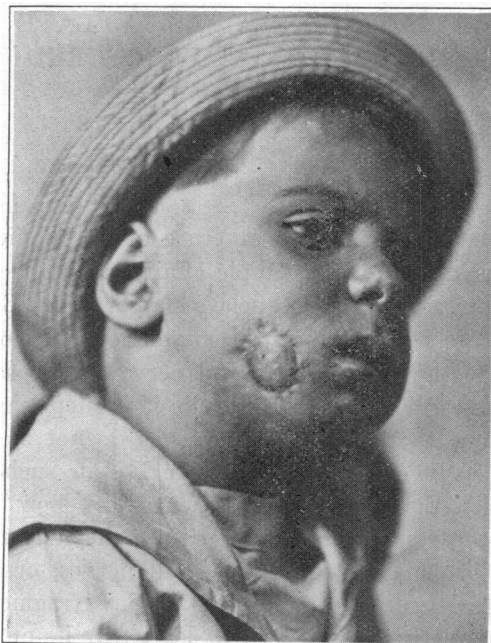


FIG. 5.—The final result.

to open his mouth about one-half an inch, and can chew meat and hard biscuits.

#### SUMMARY

Although it is impossible to draw any definite conclusions from the literature, and from the above reported case, as to which form of treatment is most efficacious, we feel that wide excision and local applications of gentian violet and acriflavine proved to be the most important factors in the recovery of this patient.

#### REFERENCES

1. ABT, *Abt's Pediatrics*, 1924, 3: 78, Saunders, Phila.
2. KEEN, *Surgical Complications and Sequels of Typhoid Fever*, Saunders, Phila., 1898.
3. ADAMS, *Arch. Paediat.*, 1904, 21: 81.
4. ADAMS, *Am. J. M. Sc.*, 1910, 139: 638.
5. MORSE, *Boston M. & S. J.*, 1896, 134: 205.
6. USHER, *Canad. M. Ass. J.*, 1927, 17: 1486.
7. OSLER, *Typhoid and Typhus Fevers*; *Nothnagel's Encyclopedia of Practical Medicine* (Am. Ed.), Saunders, Phila., 1910.
8. WEBB-JOHNSON, *Surgical Aspects of Typhoid and Paratyphoid Fevers*, Oxford Med. Pub., 1919.
9. SOISA, *Policlinico* (sez. prat.), 1929, 36: 1099.
10. BERGER, *Am. J. Dis. Child., Soc. Trans.*, 1927, 33: 542.
11. BENEDICT, *Arch. f. Kinderheilk.*, 1930, 91: 105.
12. MELZER, *Deutsche med. Wchnschr.*, 1929, 55: 1806.
13. GOODALL, *Brit. J. Child. Dis.*, 1930, 27: 204.

### AVULSION OF THE LESSER TROCHANTER OF THE FEMUR

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A healthy athletic boy, sixteen years old, was running to catch a street-car. He slipped on some ice, caught his right foot in a rut, and saved himself from falling by a violent backward jerk of the body. There was immediately severe sharp pain in the right groin and the adjacent part of the thigh. After a few minutes he was able to walk to the street-car, holding the right hip and leg stiff, and sliding the right foot along the ground. When seen at home, about half an hour later, the patient was sitting on a bed, bent forward at the hips, and with the right foot pressed firmly on the floor. In that position there was very little pain. Attempts to get him to lie down were unsuccessful until the right thigh was held flexed against the abdomen. Then the right leg was passively extended without any very severe pain.

Examination showed no deformity of the hip and no swelling or ecchymosis in that region. There was marked tenderness on deep pressure over Scarpa's triangle, and on the posterior medial aspect of the thigh immediately below