INTENSIVE TREATMENT OF ACUTE TETANUS

BY

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The intensive treatment described below was followed by the very gratifying and somewhat surprising recovery of a patient who was suffering from acute tetanus. It therefore appears to be worthy of record.

CASE RECORD

A mason's assistant, aged 18, was admitted to the Surgical Unit late at night on January 24th, complaining of pain and stiffness of the jaw. Nine days previously he slipped upon a plank, and a rusty nail pierced his boot and entered the sole of his foot. The nail was removed by a doctor and the wound healed rapidly. On admission there was marked trismus and slight rigidity of the neck. The temperature was subnormal. His general condition was good, although he appeared somewhat pale and was perspiring freely; there was no risus sardonicus. A small healed scar was seen under the ball of the big toe. He was given 40,000 units of antitetanic serum intramuscularly that night. By the following morning he was desperately ill—temperature 104° F., very pale, with risus sardonicus well marked, complete opisthotonos, and the abdomen as rigid as a board.

Vigorous antitetanic treatment was immediately inaugurated. Phenol 2 per cent. was injected deeply into and around the scar on the sole of the foot. Antitetanic serum 20,000 units, with 2 c.cm. 25 per cent. sterile magnesium sulphate, were introduced intrathecally after the appropriate amount of cerebro-spinal fluid had been withdrawn, and 20,000 units was given both intravenously and intramuscularly. As the muscular contractions persisted this dosage of antitetanic serum was repeated daily for the first four days. Hypodermic injections of 1 c.cm. of 1 per cent. phenol were given three times daily for the first week. Three days after admission he developed pulmonary oedema, and became cyanosed. It appeared that death would not be long delayed. He was treated with hypodermic injections of 1/100 grain of atropine three times daily, and daily injections of 10 c.cm. of antipneumococcal serum for the next six days, when the pulmonary oedema cleared up. During this time the antitetanic serum was administered daily. The muscular rigidity persisted. A consultation was held, and, in spite of the absence of tenderness and local spasm on the sole of the foot, it was decided to open up widely the area of the healed scar. Amputation of the foot was considered, as the patient's condition was desperate, but the less drastic interference was decided upon first.

After the administration of intrathecal antitetanic serum and magnesium sulphate, 0.05 gram of stovaine was introduced into the spinal theca, and, during the anaesthesia which followed, the small scar was cut into by an extensive crucial incision and the flaps turned out. A swab from the depths of the scar failed to grow *B. tetani* on an anaerobic culture. The wound was curetted, packed with eusol gauze, and dressed thrice daily. Catheterization was necessary for a few days in the second week. The use of volatile anaesthetics for paroxysmal exacerbations (which, fortunately, were few) was contraindicated on account of the pulmonary oedema. Chloral hydrate, potassium bromide, and morphine were given to this end, to promote sleep when necessary, and for the relief of pain, which was sometimes agonizing.

The temperature varied from 100° to 106° F., until the end of the sixth week, when it became normal and remained so.

The intrathecal administration of antitetanic serum, and its augmentation by the intravenous and intramuscular routes, was continued on alternative days until the end of the fourth week on account of the persistence of spasms and general rigidity. At the end of this time the patient was terribly emaciated, but the disease had been eradicated, and his convalescence was slow but uneventful.

COMMENT

The recovery, no doubt in large part due to careful, painstaking, and intelligent nursing, appeared to follow the use of very large doses of antitetanic serum administered subcutaneously, intrathecally, and intravenously. Further, local excision of the wound was undertaken, and eusol (highly oxygenating) dressings were kept applied. Magnesium sulphate was administered intrathecally and phenol subcutaneously. Antipneumococcal serum also appeared to help when a bronchopneumonia threatened. The case serves as a plea for the administration of antitetanic serum in heroic doses—especially by the intrathecal route—even when the condition appears hopeless. It also illustrates the fact that "diminution or stoppage of the serum has brought on fresh spasms or increased the rigidity, which have promptly subsided on the administration of more serum." Altogether, approximately 1,800,000 units of antitetanic serum were used in this case, at a cost of nearly £90.

I am indebted to Professor A. W. Sheen (director of the Surgical Unit) for his kind permission to publish this case.

REFERENCE

¹ Yodh: *British Medical Journal*, 1932, ii, 589.

INTERNAL FAECAL FISTULA AND DEATH FOLLOWING APPENDICECTOMY

BY

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The study of modern textbooks and literature is somewhat confusing as regards the handling of the patient whose appendix has been removed, and who, within three or four days of the operation, begins to show those ominous signs known to all surgeons as likely to mean death in the near future. Further, in the actual presence of such a case, the opinions of surgeons as to the exact diagnosis and treatment is often divided, whereas all dread the worst prognosis.

It has been my lot to be called into consultation in two such cases lately, and I have also been allowed to perform a necropsy in each case.

Case 1.—H. C., aged 21, a well-built man, was admitted having had a previous attack of acute appendicitis. This had been successfully weathered, but he was about to begin another attack. The appendix was removed through a McBurney's incision. It was retrocaecal and subacutely inflamed. There was no fluid in the abdomen. Catgut was used for the stump, and a purse-string suture made. As on the third day after operation the patient had slight fever an enema was given with satisfactory results, and a purge was then ordered. On the following day the patient was in a collapsed condition, and, soon after, localized peritonitis in the neighbourhood of the wound was diagnosed. In the afternoon an abscess, with very fluid foul pus, was found in the pelvis and drained. Notwithstanding this the patient grew worse and died on the eighth day. Post mortem the intestines were removed with great care and, under gentle pressure from a tap, water was allowed to flow into the bowel. In due course the water spurted through the hole at the site of removal of the appendix in the caecum. In this case it seemed probable that the enema had burst the sutures inserted at the site of the amputation of the appendix. The internal fistula in the caecum, lying up against the ilio-psoas muscle, did not allow of the passage of faeces—especially as the bowel had been previously emptied—but did permit the passage of the most virulent of all the bowel fluids into the iliac fossa and the pelvis. The greenish track, leading from the internal fistula towards the pelvic abscess, provided ample evidence of this.

Case 2.—Admitted sixty hours after starting the attack, this patient was kept under observation according to Ochsner-