The toxic effects were of an acute character, the animals dying in twelve to eighteen hours. The main *post-mortem* appearance consisted in a more or less acute congestion of the lungs. The filtered cell juices contained about 5 mg. of solid matter in each cubic centimetre.

The above experiments will be sufficient to prove that it is possible to extract an acutely lethal toxin from the bodies of virulent pneumococci, and one of much greater potency than the soluble toxins described by previous observers, inasmuch as the ascertained minimum lethal dose was about $\frac{1}{4}$ mg.

The endotoxin of the pneumococcus is sensitive to the action of heat. A filtered cell juice heated to 55° C. for an hour failed to kill in doses of 0.5 and 1 c.cm., whilst 2 c.cm. only caused death at the end of five days. The unheated juice was acutely lethal in doses of $\frac{1}{2}$ c.cm.

The prolonged action of chloroform vapour is also injurious to the toxin. After an exposure of one hour to chloroform vapour, 0.5, 1, and 2 c.cm. did not kill the test animals, the lethal dose of the untreated toxic cell juice being $\frac{1}{2}$ c.cm.

The immunizing experiments with the above toxin of the pneumococcus are at present in progress, and will form the subject of another communication upon the feasibility of producing an antitoxic serum.

REFERENCES.

¹ G. and F. Klemperer, *Berl. klin. Woch.*, 1891, Nos. 34 and 35. ² Foa and Scarbone, *Centralbl. f. Bakter.*, vol. x, p. 768. ³ Foa and Scabia, *ibid.*, vol. xi, p. 615. ⁴ Pane, *ibid.*, vol. xxi, p. 664. ⁵ Mennes, *Zeitsch. f. Hygiene.*, vol. xxv, p. 413. ⁶ Isaëff, *Annales de l'Inst. Pasteur*, vol. vii, p. 29. ⁷ Carnot and Fournier, *Archiv. Méd. Expér.*, 1900, p. 357. ⁸ Washbourn, *BRITISH MEDICAL JOURNAL*, 1897, i, p. 510, and 1899, ii, p. 1247. ⁹ Römer, *Archiv f. Ophthalmologie*, vol. 55, 1902. ¹⁰ Macfadyen, *BRITISH MEDICAL JOURNAL*, April 21st, 1906.

RUPTURE OF INTERSTITIAL TUBAL PREGNANCY: HYSTERECTOMY.

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ALTHOUGH the formation of a gestation sac in the wall of the uterus is the rarest form of tubal pregnancy, the condition is one of general interest, as it is liable to unexpectedly present itself to any one who is called upon to open the abdomen for intra-peritoneal haemorrhage.

History.

A. H., a multipara, aged 30, was seized with sudden pain in the left side of the lower abdomen while getting up from bed at 8 a.m. The menstrual periods had been quite regular up to six weeks previous to seizure. Since the time of the omitted period there had been frequent but slight pain in the left pelvic region. The last pregnancy had been three years ago. From the onset of the acute pain the abdomen became more generally tender and the collapse increased. There was no haemorrhage from the vagina.

Dr. Murray, who was called to the patient, made a diagnosis of ruptured tubal gestation and ordered immediate removal to the Scarborough Hospital.

Condition on Admission.

On admission the collapse was very marked, pulse 120 to 130 running; face and extremities cold, clammy and blanched. The abdomen was fixed, distended and tender. Palpation revealed a sort of boggy resistance. Strychnine was given hypodermically and an infusion of a pint of saline with 5 minims of adrenalin made under the breasts.

Operation.

Owing to the prompt action of Dr. Murray the patient was submitted to operation within four hours of the onset of the attack.

The peritoneal cavity when opened was found to contain a large quantity of blood clot. On bringing first one tube and then the other into the wound without finding any sac or abnormality, I thought that the diagnosis was erroneous and that the bleeding had some other source. The uterus, however, was felt to be distinctly enlarged, and on bringing it up a small ruptured sac full of clot was seen projecting from its wall just above the point of emergence of the left tube. Being unexpectedly confronted with a condition which I had previously merely heard of as a pathological curiosity, I saw no way of effectively stopping the bleeding but by removing the uterus. The patient was accordingly placed in the Trendelenburg position, and with Dr. Salter's assistance the uterus, with the left tube and ovary, was amputated from the cervix, the right ovary being preserved.

Result.

The after-history was entirely uneventful, the patient making a good recovery.

Description of Specimen.

On dividing the removed uterus an oval sac about 1 in. in its longest diameter was seen lying in the wall of the womb and slightly projecting from its surface, in connexion with and immediately above the uterine portion of the left tube. The sac, which had a rent about $\frac{1}{4}$ in. long on its peritoneal surface, was full of soft, friable tissue infiltrated with blood. No trace of the embryo was found. The cavity of the uterus was enlarged and empty, and the uterine mucosa thickened. The left ovary contained a large corpus luteum.

Cases of interstitial gestation are rare (1 to 77 of all cases of ectopic gestation, Martin), and when ruptured lead to exceptionally profuse bleeding owing to the wall being formed by vascular uterine tissue. The condition is also of interest practically, as the operation required when rupture occurs is necessarily different from that performed in ordinary cases of tubal gestation.

Although my patient made a good recovery after removal of the uterus, even more rapid than a simple case of ruptured tubal gestation I treated by removal of the tube and ovary a short time ago, yet one cannot help feeling that hysterectomy may be rather a severe operation to perform on a gravely collapsed patient, and possibly entails more mutilation than absolutely necessary. This feeling was rather strengthened by reading a case reported by Battle,¹ in which, finding a condition of ruptured interstitial pregnancy very similar to the present, he scraped out the sac and brought the uterine peritoneum together over it with Lembert sutures, the patient making a good recovery. Other cases in which the treatment consisted in removal of a wedge-shaped piece of uterus, including the sac, bringing the raw surfaces together by suture, are quoted from Franqué² and Hofmeier.³ However, one is relieved to find that hysterectomy, which was the treatment adopted on the spur of the moment, is recommended by some.⁴

The surer prevention of any further haemorrhage after removal of the uterus seems to me to render it advisable if the patient is operated on early enough to stand it; and when one considers how often tubal gestation appears to repeat itself, the natural reluctance to inflict the increased mutilation, especially in a woman who already has children, will be much lessened.

REFERENCES.

¹ *Lancet*, April 21st, 1906, p. 1098. ² *Journal of Obstetrics and Gynaecology of the British Empire*, June, 1906, p. 485. ³ *Ibid.*, p. 491. ⁴ *Ibid.*, p. 489; Herman's *Diseases of Women*, p. 501.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL.

NERVOUS SHOCK.

ON March 12th last the patient, a stolid unemotional Scotchman, was travelling on the London and North-Western Railway to Preston, when the carriage in which he was seated ran off the line. It "telescoped" into a van in front, which had also become derailed without turning over, and the front of the carriage was slowly but steadily forced into within a foot of the patient's chest. He received no physical injuries, and for some hours felt perfectly well. He then became "nervous," and the night subsequent to the accident appears to have been one of undiluted horror. He returned to London on the 14th, and I saw him for the first time on the 16th.

The nervous symptoms were then particularly well marked and typical of the condition. He had a startled appearance, was perspiring freely, respiration much increased, pulse 120, general tremor, and there was some slight headache. He was unable to sleep, the remembrance of the gradual telescoping of his carriage being so vivid as to become a complete mental obsession. He complained of some dimness of vision and the pupil reaction was rather sluggish. There was no digestive disturbance except for some loss of appetite. He was, of course, unable to concentrate his attention on any mental work, but there was no impairment of memory.

He was given nerve sedatives, and veronal as a hypnotic. He thus got some sleep, but otherwise the condition remained practically unchanged for three days. The excessive perspiration and the rate of respiration then began to diminish, and the pulse fell to 100. The tremor still persisted, and he was very nervous at crossing a street, though curiously enough he did not object to train journeys. His weight did not decrease, and gradually he