Medical Memoranda

An Improved Pappenheim Stain for Gonococci

Since the publication in the *B.M.J.* (1943, 1, 254) of a short article by me, "An Improved Pappenheim Stain for the Detection of Gonococci in Smears of Pus," I have had much correspondence concerning it. Many bacteriologists have obtained good results; others have experienced difficulties. These additional notes may therefore be helpful.

In most instances of difficulty the pyronine in the stain has been thought at fault, but I suggest that it is the methyl green. G. T. Gurr informs me that this dye is more concentrated now than before the war, and it is to be noted that the amount of methyl violet present as an impurity is variable. Gurr originally supplied green and blue-grey batches of methyl green. The blue-grey dye is now obsolete, and some batches apparently contained an excess of methyl violet. It should be observed that the green powder itself turns blue-grey in time on keeping and exposure. Some workers have got good results only by treating the methyl green twice or even three times with chloroform, and this may be accounted for by the presence of an excess of methyl violet in the dye. I have not found more than one extraction necessary, but sometimes have produced a satisfactory stain only by reducing the concentration of the methyl green, and 0.1% may give a good result where 1.0% fails.

Pyronine from different sources has been found suitable, but some batches seem to have a lower dye content than others, as suggested by the differences in intensity of saturated solutions. Grüber's pyronine and pyronine (Conn), which is supplied by the National Aniline and Chemical Co., Inc., New York, yield excellent results.

If a satisfactory stain is not got by a reduction of the concentration of methyl green, proceed further by raising that of the pyronine. In some combinations of methyl green and pyronine, 2 g. or more of the latter may be necessary. A satisfactory stain is obtained when pyronine is present in an amount sufficient to colour the cytoplasm of mononuclear leucocytes in smears a faint pink.

In regard to the keeping quality of the modified Pappenheim stain, it is now possible to confirm that this is indefinite. I still have some prepared in April, 1943, which provides the results described in the original article.

The modified formula that follows is now recommended:

Methyl green (Gurr), chloroform-treated, 0.1-0.5%	100 c.cm.
Methyl alcohol, absolute	10 c.cm.
Pyronine G. (Conn, Grüber, B.D.H., or Gurr)	0.5 g. or more
Phenol	1.0 g.
Glycerol	20 c.cm.

ADDENDUM.—A bacteriologist in the Royal Navy has written me his appreciation of the stain, and has remarked that he stains directly with it and not as a counterstain in Gram's method. He claims a big saving in time and material by comparison with other stains for gonococci in smears, and has particularly noted that consistently good results are got even by laboratory assistants without any special staining experience. (I account for these results by stating that it is almost impossible to overstrain.)

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Long Survival after Hysterectomy for Chorion Epithelioma

The following case is described at the suggestion of Emeritus Professor Ranken Lyle, to whom I am indebted for the details of the previous treatment.

The patient, Mrs. A., aged 35, was admitted to the Royal Victoria Infirmary, Newcastle-upon-Tyne, under the care of Dr. Ranken Lyle on Aug. 27, 1910, suffering from hydatidiform mole. Curettage was performed by Dr. Lyle, and she was discharged six days later. Four months afterwards, on Jan. 6, 1911, she was readmitted, and stated that ever since the previous operation she had had a continuous small loss of blood from the vagina. The uterus was not grossly enlarged, and a diagnosis of retained products was made. On Jan. 9 she was again curetted by Dr. Lyle, who removed a few cysts from the uterus. During this operation the uterus was perforated, even though the greatest care was taken. Dr. Lyle considered this highly significant of the presence of chorion epithelioma, and performed an immediate vaginal hysterectomy. The left ovary, which was the size of a pigeon's egg, was removed, but the right, which was normal, was conserved. During the operation a further perforation occurred and a small piece of growth escaped. The uterus, which was slightly enlarged, showed a perforation through the fundus on removal. The patient was discharged from hospital

17 days later. The specimen was reported on by Dr. Stuart McDonald, who stated that the wall of the uterus was extensively invaded by proliferating syncytial cells, and that numerous chorionic villi showing myxomatous degeneration were present. The condition was one of chorion epithelioma.

On Dec. 13, 1943, this patient, now aged 68, attended the out-patient department, bringing with her a letter she had received in 1924, asking her to attend the follow-up department. She explained that she had not been able to attend then owing to a domestic crisis, and apologized for keeping the department waiting 20 years! On examination I could detect no pelvic abnormality. There was no prolapse, and the vaginal vault was smooth and mobile. There were, however, signs of basal cystitis, for which she is now receiving treatment. She is very active, and still does all her own housework.

It would appear that freedom from recurrence for 33 years is sufficient to claim a complete cure.

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An Unusual Swelling on Dorsum of Foot

This case is of interest, first because of the unusual findings at operation, and secondly because it illustrates the difficulty of making diagnoses in China, the land of surprises. The patient was a comparatively well-nourished Chinese soldier aged 48. He came complaining of a painful swelling on the dorsum of his left foot.

CASE HISTORY

The patient had had nothing the matter with his feet until three months before admission. Then, while marching, he experienced a sudden pain in the under-side of his left foot. At the time he was wearing straw sandals, which protected him from sharp flints, etc. When he examined his foot he found no injury, though the pain persisted; the site of this pain was just lateral to the ball of the foot. About a month later he noticed a swelling on the dorsum of the foot; the pain was now referred to this lump, which slowly increased in size.

Examination showed the patient to be well developed. His feet were typical of the ordinary Chinese buck private; the soles were well protected by a horny layer of thick skin, in which were the usual fissures. On the left dorsum an oval-shaped swelling about 1 in. by 2 in., lying in the long axis of the foot, could clearly be seen; it seemed to arise in the space between the extensor tendons of the big and first toes. On palpation it felt rather like a big ganglion, as it was fluctuant; but somehow it gave one the feeling more of soft rubber than of fluid; it was too tense to be a lipoma. Medical opinions were divided between a ganglion and some kind of tumour with cystic degeneration.

Operation.—Under spinal anaesthesia a longitudinal incision was made over the swelling. The tumour was adherent to the tendon sheath of extensor hallucis longus, while the tendon of extensor hallucis brevis appeared to go right through it. At this stage the macroscopic appearance resembled a sarcoma of the extensor sheath. Therefore the part of the tendon buried in the tumour was excised and an attempt was made to dissect out the base of the tumour and remove it *in toto*. Owing to its adherence to all near-by structures, and the lack of any plane of cleavage, the dissection proved difficult. The cyst was punctured and a small amount of thin pus ran out. Finally, as this was almost completed, the whole cause of the trouble became apparent. A large thorn about 1½ in. long protruded from between the metacarpals into this mass of tumour. The thorn was quickly removed, and the area where it lay was curetted. After suturing the stump of the extensor hallucis brevis tendon to that of the longus, the skin was closed round a small rubber drain, which was removed next day. The wound healed by first intention.

The swelling was the result of a reactionary inflammatory process caused by a foreign body—namely, a thorn—which had pierced the sole of the foot three months previously. The thorn had passed upwards between the metatarsals of the big and first toes, and had become encapsulated in the space between the extensor tendons of those toes. The capsule was thick and adherent to the skin, to the sheaths of the extensor tendons, and to the interossei muscles. Inside the capsule was buff-coloured gelatinous degenerating matter. In the centre was a small space occupied by the thorn and a small quantity of grey pus. Owing to the lack of pathological facilities no further examination could be made.

I would like to thank Dr. Robert McClure of the Friends' Ambulance Unit, China Convoy, for his help in preparing this account.

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F. L. Munro and H. W. Jones (*Amer. J. med. Sci.*, 1943, 26, 710), who record three cases in aviation cadets aged from 23 to 26, state that agranulocytosis due to sulphadiazine administration during acute infections may be benefited by subsequent dosage with the same drug. Spontaneous regeneration of polymorphonuclear leucocytes by the depressed bone marrow may occur during the administration of large amounts of sulphadiazine, even though this drug was responsible initially for the depression.