CASE V

In pleasant contrast to the two preceding cases this boy of 16 was sent in on the strength of one sharp rise of temperature the same day. He had a small perforation in the left drum and a history of intermittent discharge from that ear. There was no tenderness or other sign of mastoid involvement. Immediate operation disclosed a septic mastoid, with pus and granulations on the exposed lateral sinus. He recovered.

Such cases could be multiplied indefinitely. They carry a twofold and very obvious lesson—namely, that a suppurating mastoid can run a completely latent course save for the ear discharge, and that when complications arise they may do so without any warning from the mastoid.

CASE VI

A boy of 10 was sent to me from the ophthalmic department with the urgent request that any focal sepsis should be discovered and eliminated. All that I could find was a small perforation in the left drum and a history of discharge. There was no tenderness, no pain, and no discharge when I saw him. In view of the urgency of the eye condition I opened the mastoid. It was full of pus.

CASE VII

A man of 20 came under my care with bilateral acute otitis media. A paracentesis of both drums resulted in his temperature becoming normal. Pain disappeared, and the left ear recovered without further intervention. The right ear on the tenth day still showed a pulsating discharge in the tympanic perforation. There was no pain, very doubtful tenderness, and the temperature was normal. Operation disclosed a frankly purulent mastoid.

CASE VIII

A girl of 6 had had pain in the left ear for some days. There was a slight temperature and some discharge from this ear. The meatus was narrowed, and there was some excoriation of its external opening. There was no tenderness. There was a history of acute earache some years previously, followed by paracentesis, but whether of one or both ears was not known. There had, however, been pain each winter, sometimes in one ear, sometimes in the other. There were no physical signs referable to the right ear at the time of examination. Both mastoids contained pus, that in the left being under pressure.

CASE IX

A girl of 8, sister of the previous case and seen a few weeks later. She had had pain in the left ear for three days. There was no temperature, no tenderness, and she was cutting a tooth on that side. The tonsils and adenoids had been removed five years previously. Two years ago there had been earache, both sides (?). There was no history of any discharge. In the left ear there was an accumulation of epithelial debris and, in the antero-inferior quadrant, a puckered area and some granulation tissue (?) suggesting a partially closed perforation. A similar area, but without granulations, was observed in the same position on the right drum, which was thickened. Shrapnell's membrane on the right side was red, but not bulging, and there was no tenderness; there was slight deafness. On the following day there was slight tenderness over the tip of the left mastoid, none over the right. Temperature still normal. Both mastoids were filled with granulation tissue and pus.

In both these children (Cases VIII and IX) the ears recovered completely, and even a long spell of whooping-cough the same winter failed to produce aural symptoms.

CASE X

A boy of 12. A recent attack of acute tonsillitis had resulted in an exacerbation of a bilateral ear discharge, which had been intermittent since acute earache following measles two years previously. The temperature was raised, and there was definite tenderness over the right mastoid. There were no physical signs referable to the left ear other than the discharge. At the operation there was nothing to choose between the two mastoids, both being frankly purulent.

CASE XI

A hospital nurse was warded for an attack of (?) influenza. There was a slight initial rise of temperature, which quickly subsided. Ten days later, while still in bed, she had an acute otitis media on the right side. Rupture of the drum resulted in the temperature again becoming normal, and it remained so. Nevertheless, three weeks later, the discharge, which in the meantime had steadily diminished in quantity, could still be seen pulsating at the perforation. There were also vague pains referred to that side of the head. There was no tenderness, and x rays failed to show any difference between the two mastoids. At the operation there was a considerable quantity of pus under pressure, and a very forwardly placed lateral sinus was already exposed to the sepsis. The organism was *Streptococcus haemolyticus*.

These cases are not exceptional. On the contrary, they represent my general experience. They must represent the experience of many others also. Whether or no latent mastoid sepsis is really as often the cause of chronic aural sepsis as these cases would suggest should be speedily settled once we are alive to its possibility. In all the cases in which I have performed the cortical mastoid operation solely on account of the persistent discharge there have been only two in which the mastoid was not frankly purulent. It cannot, however, be supposed that every case of persistent discharge following an acute otitis media is due to the presence of mastoid sepsis. At present every such case must be considered on its merits. I would suggest that in doing so the probable frequency of unsuspected mastoid sepsis should be borne in mind.

THE TREATMENT OF CHRONIC AURAL SUPPURATION WITH IODINE POWDER

BY

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The purpose of this short article is to emphasize the value of a simple method of treating chronic middle ear suppuration by insufflation of so-called iodine powder, which consists of iodine 0.75 per cent. in boric acid powder. Although I began to use this powder tentatively and without much conviction of its value two years ago, I now use it as a routine for every case of chronic middle ear suppuration, first mopping or sucking out the discharge and then blowing the powder through the perforation into the middle ear and until the deepest part of the meatus is full. Nascent iodine apparently gets into the furthest corners of the affected middle ear. A simple powder blower with a glass or wooden stem and a rubber bulb is quite adequate for the patient's own use, but a special all-glass or vulcanite powder insufflator should be used by the practitioner.

I first came across this method of treatment in Chicago and New York in the autumn of 1930. The iodine powder used was an American proprietary preparation, originated by Nathan Sulzberger, a New York chemist, about 1915, and was called by him "iodosan." It was used first of all for supplicative conditions of the nasal cavities, and only afterwards for chronic middle ear suppuration. The percentage of iodine in the powder varied from 10 to 0.75, but it was found more effective and much less irritating in the smaller percentages; in America it is now used commonly as 0.75 per cent. for the initial treatments and as 2 per cent. after a number of treatments have been given.

Many practitioners are under the impression that the treatment of ear discharge by powder insufflations is dangerous, as hard concretions may form from the powder and the drainage become obstructed, especially with small

perforations in the attic region. This fear is groundless, because the iodine and boric powder readily dissolves in the discharges within forty-eight hours. The ease with which boric powder dissolves was pointed out as long ago as 1880, when boric acid powder insufflations were recommended for the treatment of ear discharges by Bezold¹ in his textbook.

The use of iodine in the treatment of middle ear suppuration is not new. The first mention of iodine powder in the literature was in 1917, when M. D. Lederman² wrote enthusiastically of the results obtained in the treatment of middle ear suppuration by the use of a new iodine powder (Sulzberger's), the formula of which was not disclosed by its maker but which was stated to liberate readily the iodine content. The formula was not disclosed until 1930,³ and was then stated by Lederman to be a percentage, varying from 0.75 to 10, of iodine in boric acid powder; he insisted, however, that the best results could be obtained only with the original Sulzberger powder. An interesting discussion at the Section of Otolaryngology of the New York Academy of Medicine followed the reading of Lederman's paper.⁴ Lederman read a paper on the same subject at the Second International Congress of Oto-Laryngology at Madrid in September, 1932, but this paper has not yet been published.

In 1919, F. Stoker⁵ recommended the employment of bismuth and iodoform powder, 1 to 2, which was said to liberate nascent iodine; unlike iodine and boric powder, however, or even boric powder alone, it did not dissolve readily in the ear discharges, and it blocked up the deeper parts of the meatus. In 1926 F. P. Sturm⁶ wrote on the value of nascent iodine in otorrhoea; the method he employed was the local application of hydrogen peroxide drops and the internal administration of potassium iodide, which, when pushed, apparently set free nascent iodine at the point of application of the hydrogen peroxide. In 1926 Fotiade⁷ recorded a series of cases of chronic suppurative otitis media successfully treated by instillations of Calot's solution (consisting of guaiacol 1 part, creosote 5 parts, ether 30 parts, iodoform 10 parts, and olive oil 70 parts), which liberated free iodine. Guttman,⁸ in 1927, confirmed Fotiade's claims. Joseph C. Beck⁹ stated in 1929 that he had treated a series of more than thirty cases of chronic suppurative otitis media with iodine powder (Sulzberger), introduced to his notice by M. D. Lederman; most of the cases dried up, but he considered it was too early to judge of the permanence of the cure. In 1929 M. J. Mandelbaum¹⁰ recorded a number of cases of cure of chronic middle ear suppuration by the instillation of iodized oil. In 1931 N. Asherson¹¹ published an article on iodine powder in the treatment of chronic otorrhoea, quoting from the article by M. D. Lederman published in America in 1930.³ He stated that a large number of cases of chronic uncomplicated otorrhoea in children, with a marginal perforation of the drum, could be cured by treatment with 1 per cent. iodine powder, but for most cases he preferred ionization, except for those in which operation was indicated. He considered that the treatment was well worth a trial before recourse to the radical operation. My own experience is that Asherson's conclusions are very much an understatement of the value of iodine powder when the treatment is properly carried out. In the past two years I have found that it cures nearly 95 per cent. of cases of chronic middle ear suppuration, and during that period I have never had to perform the radical mastoid operation except in cases of cholesteatoma and intracranial lesions. In the latest (1932) edition of Logan Turner's standard textbook, *Diseases of the Nose, Throat, and Ear*, J. S. Fraser¹² states:

"Conservative treatment of chronic middle ear suppuration by means of drops and syringing, if efficiently carried out,

results in cure in 50 per cent. of cases. A further 25 per cent. may be cured by special methods, such as syringing through the Eustachian tube, intratympanic syringing, or the use of zinc ionization. Most of the remaining 25 per cent. require operation (radical or modified radical mastoid operation). Out of 1,893 cases of chronic middle ear suppuration seen at the Royal Infirmary, Edinburgh, during five years, 424 came to mastoid operation."

Two patients of mine, who had apparently an idiosyncrasy to iodine, could not tolerate the iodine powder (even as the 0.75 per cent.), and in one of these cases the irritation persisted for several days after the powder had been mopped out with liquid paraffin. The iodine powder has cleared up several persistent fistulas, and it is also a very useful dressing in the later stages of the after-treatment of the mastoid operation. The following are brief notes of some typical cases.

Case 1.—A man, aged 28, was seen in November, 1930. He had had discharge from the right ear for three months following a severe cold; this troubled him very much, since he was already deaf (an old-standing chronic middle ear deafness) in the left ear. There had been no improvement with syringing and drops. I told him that he ought to have a mastoid operation, but that first we should try the iodine powder. I mopped and sucked out the discharge and insufflated the powder daily for ten days. At the end of that time the discharge had stopped, and his hearing was apparently normal and has stayed so.

Case 2.—A. H., aged 32, had had a radical mastoid operation performed by an aural surgeon, but discharge continued both from the meatus and from the mastoid wound. After some months the wound was opened up and the operation re-done, granulations and more bone being removed. A post-aural fistula remained, with persistent discharge. Vaccines, ultra-violet and other rays, and innumerable different methods of treatment were tried in vain. After insufflation of iodine powder into the fistula every second day for three weeks it healed completely.

Case 3.—R. M., aged 27, had had a zygomatic mastoiditis, and the incision was made well forwards over the zygoma. The post-aural wound healed well, but a large fistula to the zygoma persisted, with abundant discharge. Fomentations, syringing with eusol, and other treatments had no effect; on opening up the wound there was no sequestrum, and six weeks after the operation the discharge showed no signs of abating. The wound was then filled daily with the iodine powder and within a week it was completely healed.

Case 4.—A man, aged 50, had had a radical mastoid operation eighteen years previously. The ear seemed quite well until two months previously when it began to discharge after influenza. A mass of cholesteatomatous debris was syringed out of the ear—the syringing caused intense giddiness—and a foul discharge continued. The discharge was mopped out and iodine powder insufflated. Three days later the discharge was much less. The cavity was then filled with iodine powder and a week later the discharge had cleared up and the old mastoid wound cavity remains dry and healthy.

Case 5.—A boy, aged 11, had had discharge from both ears for the past six years, after scarlet fever. He had had his tonsils and adenoids completely removed, and the ears had been treated by syringing, drops, and ionization, but without improvement. On March 1st, 1932, the debris was syringed out of both ears (this made the patient sick and giddy), and he was given drops of boric acid in spirit 10 grains to the ounce. On March 7th both ears were mopped out and iodine powder blown in. On March 14th the left ear was dry and the discharge from the right was slight; iodine powder was again blown into both ears. When seen on March 21st both ears were dry and apparently healed.

Case 6.—A clerk, aged 24, had had a discharging left ear for six weeks. When seen on April 9th, 1932, there was a polyp coming from the postero-superior part of the drum. The discharge was mopped away and the polyp touched with silver nitrate; iodine powder was then blown in and prescribed for the patient, who used it daily. When seen a week later the polyp had disappeared and the discharge was slight. A week later still the ear was quite dry and has remained so.

Case 7.—A youth, aged 16, had had his left ear discharging for some years. On June 2nd, 1932, the discharge was mopped out and iodine powder blown in; the powder was prescribed to be used daily. When seen on June 16th the ear was quite dry and healthy.

Case 8.—A schoolgirl, aged 14, had had her right ear discharging for a month, and when seen on July 21st, 1932, it was discharging freely. It was mopped out, and iodine powder blown in, and prescribed to be used daily. When

seen on August 4th the discharge was slight, and a week later the ear was quite dry.

M. D. Lederman³ describes the iodine powder as an intimate association of iodine with boric powder prepared by mixing an iodine solution with dry, finely powdered boric acid and evaporating the solvent. I have found the following method simple and effective:

R. Iodi resublimatae gr. 3.6
Pulv. acid. boric. ad 3j

Sig. Iodine 0.75 per cent. in boric powder; use in a powder blower as directed.

Rub down the iodine with a few drops of spirit. vini rect. until solution is effected, and gradually incorporate the finely powdered boric acid. The preparation should be freshly prepared and kept in a well-closed container to avoid, as far as possible, loss of iodine by volatilization.

Practitioners and hospital colleagues to whom I have introduced the method have taken it up with enthusiasm. At one institution for children which I visit as a consultant, ionization was formerly the favourite method of treating ear suppuration, but it is now discarded in favour of this newer, much simpler, and more effective treatment.

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RELATIONSHIP OF SYPHILIS AND YAWS *

BY

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The problem as to the identity or otherwise of yaws and syphilis has assumed great importance in recent times owing to advances in treatment. Those who hold that yaws and syphilis are two entirely distinct diseases will have no hesitation in treating yaws with a few injections of any suitable drug which will get rid of the skin eruption. Those, however, who think that yaws is the same disease as syphilis, and those also who hold that, without being identical, yaws protects to some extent against syphilis, will regard such treatment of yaws as fraught with considerable risk. It is a matter of great importance to our tropical possessions that a decision on this question should be reached as soon as possible. As a result of my investigation into the evidence it does not appear possible to assert here that there is only one disease. On the other hand, the more closely one examines the differential points which are set out in the textbooks on tropical medicine the less convinced one becomes that the criteria are sufficient for differentiation. The onus of proof rests on those who assert that there are two diseases and not simply modifications of a single disease.

In the short time available to-day it is impossible to deal with the long list of so-called differential points set out in the textbooks. For the purpose of opening this discussion only those have been selected which are most stressed by authors, and which form the essential arguments, the two most important being the "congenital" and the "severe nervous system involvement."

THE "CONGENITAL" ARGUMENT

The congenital contrast is usually set out in the tables as follows: yaws, not congenital; syphilis, congenital. The statement that yaws is not transmitted transplacentally is accepted by the majority of workers, but there are a few records which suggest that such transmission occasionally occurs. In regard to the statement that syphilis is congenital, are we justified in accepting this as correct? I think not; syphilis is not the name of a single clinical entity: it is divisible into several clinical divisions, and to some of these the statement does not apply. We may divide syphilis into categories thus:

1. Acquired venereally, with or without chancre.
2. Acquired non-venereally. This again may be divided into: (a) adult, with extragenital primary sore; (b) infantile, with extragenital primary sore, rarely genital; and (c) congenital, with no primary sore.

The general dictum "syphilis congenital" may be applied to the first main group, venereally acquired syphilis, provided we qualify it with reservations to the effect that transmission to the partner in marriage does not inevitably occur, that once infected the mother does not necessarily transmit to her offspring, that if she does transmit she may do so irregularly, not to one child but to the next, and even to one only of twins. In the second main division I have not been able to find figures which show the results as to transmission transplacentally of adult or infantile syphilis with extragenital chancre. Information concerning the latter would have been useful for our present purpose, since it is a group very comparable with yaws. Some authors consider that syphilis acquired soon after birth gives rise to stigmata similar to those of congenital syphilis. In the third division of the non-venereally acquired group—namely, congenital syphilis—we have the evidence of many observers who are agreed that transmission transplacentally in such cases is a very exceptional occurrence; some even go so far as to suggest that there is no properly authenticated case of such transmission.

Here, then, in congenital syphilis, and probably we may include the acquired syphilis of infancy, we have a volume of the disease, and a very important one for our present purpose, to which the dictum that syphilis is congenital cannot be applied. Reverting to yaws and syphilis it seems to introduce a fallacy if we compare yaws, which is a disease of early childhood particularly and acquired non-venereally, with syphilis as a whole. We ought at least to refrain from comparing it with venereally acquired syphilis of adults; the comparison should be limited to those forms of syphilis which affect young children and are acquired non-venereally. Instead of the antithesis with which we began we should then have: in yaws, transplacental transmission very rarely recorded; in congenital syphilis, and the acquired syphilis of early childhood, transplacental transmission very rarely recorded. When yaws is compared thus with those forms of clinical syphilis with which it appears to be properly comparable the value of the greatly emphasized "congenital" criterion of difference is seen to have no existence.

YAWS AND SYPHILIS AND THE NERVOUS SYSTEM

In the tables the contrast is: yaws, nervous system never seriously affected; syphilis, nervous system prone to infection—for example, tabes and G.P.I. It has been recorded in regard to yaws that tabes and paresis occur in adult natives of Fiji, where syphilis is reputed unknown, but the majority of observers have failed to record these sequelae in yaws areas or have recorded them very rarely. From the statement concerning syphilis, most readers would assume that in syphilis there is always a significant amount of tabes and paresis, such as is recorded in the

* Read in the Section of Tropical Medicine at the Centenary Meeting of the British Medical Association, London, 1932.