PUERPERAL INFECTIONS IN RELATION TO MIDWIFERY ATTENDANTS

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Recently two most important cases from the point of view of liability in connexion with puerperal infections have occurred in the High Court. These rulings affect very closely those engaged in the practice of midwifery wherever it takes place—in the patient's own home, in a nursing home, or in a hospital—and are applicable both to doctors and to midwives. In view of the fact that the Midwives Act, 1936, which has recently come into force, places many midwives in the employment of local authorities, it follows that such authorities are responsible for cases of puerperal infection if these should arise in the course of their midwives' practice. Such responsibility falls in no less measure on doctors and hospitals. In view of this we have ventured to put forward the following suggestions in connexion with puerperal infections due to the *Str. pyogenes*, as they have been used by us for the past eighteen months with satisfactory results.

We have deliberately refrained from going into details of the control of puerperal infection such as masks and dettol, as this matter has already been adequately dealt with by Colebrook (1936). Since the bulk of serious cases of puerperal infection are due to infection with *Str. pyogenes* Group A it is a rational attitude to adopt that all cases of pyrexia occurring during the puerperium should be regarded as due to *Str. pyogenes* until proved to the contrary.

In order to be able to do this it is essential to investigate such cases at the earliest possible moment. This should be done by taking swabs from the cervix and throat, together with a blood culture, from the patient and examining these bacteriologically. Until the results are known the midwife should cease to attend any further cases. If the examination yields a positive result then bacteriological examinations of swabs taken from the nose and throat of the midwife and any other contacts should be made. If *Str. pyogenes* is isolated from any of these it should be typed in order to compare it with the organism infecting the patient and so identify the true source of the infection.

Examination of Midwives' Throats

It is a rational corollary of this that midwives' throats should be examined if they have a cold or tonsillitis or have been in contact with a case of streptococcal infection such as scarlet fever. At the same time they should be suspended from duty until the bacteriological investigations are known to be negative. This is most important, as it is not uncommon to trace the source of infection to a midwife who has had a cold which she has regarded as trivial. At the same time it is also advisable to make sure that there are no obvious cases of streptococcal infection such as discharging ears or noses in contact with the patient before delivery. It is inadvisable to swab all prospective contacts as a routine, since experience has taught that swabbing of clinically normal throats for no specific reason, as, for example, when a known case of infection has occurred, will almost inevitably lead to confusion. Further, the examination of swabs, unless performed by those experienced in working with the organism, is liable to yield a high apparent positive rate.

In addition to this one difficulty is an inability to be sure when the organism is in a virulent state, although there is reason to believe that if the throat is clinically normal the person is probably not infectious. It has been observed by one of us that it has been possible to recover from the throats of healthy nurses the same type of *Str. pyogenes* which was the cause of an acute tonsillitis a year previously, although careful investigation failed to show that any cases of infection had in the meantime occurred among persons with whom they had been in contact. However, it is obvious that when once *Str. pyogenes* has been discovered in the throat of a midwife it is impossible to allow her to attend any further cases so long as it remains there, lest puerperal infection be contracted by one of her patients which may be thus ascribed to her.

A certain public authority, before engaging its salaried midwives, recently swabbed their throats as a routine, and a high percentage of positive swabs was revealed, thus placing it in the curious dilemma of being unable to appoint midwives otherwise apparently healthy and with unblemished records without rendering itself liable to serious criticism in the event of subsequent infection occurring. It would appear more reasonable to examine the throats clinically in the first instance and only swab those with a suspicious appearance.

The problem which presents itself is to obtain a service of midwives who are presumably free from streptococcal infection and who, should they unknowingly infect a case, will rapidly be prevented from producing any further damage. Under such circumstances should a case of puerperal infection occur it is difficult to see how any claim for negligence could succeed.

Three Important Questions

At the same time if midwives are found to be harbouring *Str. pyogenes* and are suspended from duty on that account the employer is liable to pay her compensation until she is able to resume duty, provided that she co-operates in attempts to make herself no longer a potential source of infection. Three questions appear to be relevant:

1. WHEN SHOULD A MIDWIFE BE SUSPENDED FROM DUTY?

A midwife should be suspended from duty in the following circumstances:

(a) When she has a case of puerperal infection occur in her practice, until it is shown that the case is not due to the *Str. pyogenes* or, if it is due to this organism, then that she is not harbouring it in her throat. The fact that it is not the same type is not relevant, as once the midwife is found to have *Str. pyogenes* in her air passages she must cease to practise midwifery until proved negative bacteriologically. At the same time other manifestations of septic infection should not be overlooked, such as septic sores on the hand.

(b) When the midwife is herself suffering from an acute infection such as a sore throat, which may be due to *Str. pyogenes* until proved to the contrary bacteriologically.

(c) When the midwife has been in contact with a known case of streptococcal infection such as scarlet fever, until proved bacteriologically to be free from such an infection herself.

In connexion with swabs it should be stressed that these should be taken by a person who is experienced in the technique, as a badly taken swab is not only useless but is misleading. We have recently examined two swabs taken from the same case on the same day, one by a midwife and the other by an ear-nose-and-throat surgeon. The former grew every organism but *Str. pyogenes*; the latter gave a pure growth of *Str. pyogenes*.

2. WHEN MAY A MIDWIFE SAFELY RETURN TO DUTY?

She may only return to duty when proved to have no *Str. pyogenes* in her upper air passages bacteriologically.

3. WHAT MEASURES MAY BE EMPLOYED FOR HER SAFE RETURN TO DUTY?

Such cases as are swab-positive would appear to fall into three groups:

(i) *Those with Apparently Healthy and Normal Upper Air Passages on Examination.*—These would be labelled by Okell and Elliott (1936) as "latent," and may be due to recent exposure to infection, in which case they rapidly become negative. They should first be examined by an ear-nose-and-throat surgeon, and if he cannot find any reason for the swab-positive condition then they should be sent to the seaside and instructed to perform a toilet daily with painting and gargling. Such cases have in our experience rapidly become clear. If, however, they do not do so, then enucleation of the tonsils and adenoidectomy should be considered.

(ii) *Those who on Examination Show an Obviously Unhealthy Nasopharynx or Chronic Sinus Disease.*—In this case they should be subjected to surgical intervention, if necessary followed by a seaside holiday.

The following case is an excellent example of this:

Midwife D. had two cases of streptococcal puerperal infection occur in her practice, and a swab from her throat was shown bacteriologically to produce a fairly profuse growth of *Str. pyogenes*, Type 5. She failed to respond to conservative treatment, and a further swab showed if anything a more profuse growth of the organism than before. In view of this the presence of an infected sinus was suggested; she was operated upon, and an infected antrum drained and her tonsils removed. Two weeks later, to our disappointment, a further swab gave a profuse growth of *Str. pyogenes*, but this proved to be Type 28. This was considered to be a superimposed infection, which turned out to be the case, as the swabs gave successive scantier growths of *Str. pyogenes*. They eventually became negative, and she returned to work.

(iii) *Those Obviously Suffering from an Acute Infection such as Tonsillitis.*—These usually become non-infective after the acute stage is past, but in view of the fact that scarlet fever is still isolated for at least six weeks it is illogical to isolate such cases for less, as they are due to the same organism. They must, however, even then await the advent of negative swabs; and again our impression is that a period of convalescence at the seaside will hasten events. If, however, they remain persistently positive then they should be examined as mentioned above.

In connexion with the examination by the ear-nose-and-throat surgeon we have found the following report form extremely useful:

1. Is there chronic infection of the tonsils and adenoidal tissue?—If suspected please swab, and forward swab to the above address.
2. Is there any evidence of sinus infection?—If suspected please send a swab of washings as above.
3. Is there any other focus of chronic infection due to the *Str. pyogenes* which we have isolated?
4. Please will you suggest treatment, as it is absolutely essential that any possible source of the organism should be cleared up.

We would mention that, as might have been expected in view of the type of lesion, tonsil in these cases has been of no value in clearing up these so-called carriers.

Conclusions

1. It would appear essential, not only for the benefit of the patient but also in the interest of the attendants, that all cases of pyrexia during the puerperium should be investigated as a routine.

2. If in the course of this investigation one of the attendants is found to harbour the *Str. pyogenes* in his or her throat or air passages then work in midwifery should be suspended until the attendant is bacteriologically negative, whether shown to have been the actual cause of the infection or not; this would also apply to streptococcal infections in the midwifery practitioner.

3. Although such rules would appear very stringent at first sight the prospect of obtaining the swab-negative state is not so gloomy as might be imagined.

4. The swabbing of clinically normal throats, unless they are believed to be a source of infection, cannot be too much deprecated.

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VENEREAL DISEASE IN THE U.S.A.

PLANNING AND RESEARCH

The social and medical problems of venereal disease in the U.S.A. have stirred the medical and the public conscience during the past year or so, and in December, 1936, a conference on its control was addressed by the Surgeon-General, U.S. Public Health Service, Assistant Surgeon-General R. A. Vonderlehr, who is in charge of the Division of Venereal Diseases, and many well-known medical authorities.¹ Although syphilis was made reportable in 1919 there is little or no evidence to show that it is on the decrease, and the same applies to gonorrhoea. It is clear that the situation is unsatisfactory and that the United States is far behind Great Britain in its system of control of venereal disease. Energetic steps are now being taken to grapple with the situation, and the Social Security Act has given an impetus to the public health measures and put more funds at the disposal of the authorities.

The views and recommendations expressed at the conference were on lines familiar to workers in this country. But it is noteworthy that nothing was said about prostitution, either open or clandestine, the importance of which is so much stressed in many European countries.² It is doubtful whether much can be done to reduce the number and infectivity of these women. Syphilis appeared to attract more attention than gonorrhoea, but those who addressed the conference on gonorrhoea pointed out that it is no less important than syphilis, that it is more prevalent, and that the same preventive measures are applicable to both.

Education of Doctor and Patient

In general the recommendations were on stereotyped lines. Notification, if it could be carried out efficiently, would be a great help, but so far it has been only partial, and it is difficult to see how it could be strictly enforced. Education seems to have been the keynote. First, the public should be taught to recognize these diseases and their gravity, and be informed of the importance of early treatment and the necessity for continuing up to complete cure—or at least until no longer contagious. Secondly, time should be found in the curriculum for the instruction of students and for postgraduate classes and courses for qualified medical men. The average practitioner knows little or nothing of venereal disease, and there are but few trained specialists.

¹ *Proc. Conf. Vener. Dis. Control Work, Washington, D.C.* December 28–30, 1936. Supplement No. 3. U.S. Government Printing Office. (15 cents.)

² *British Medical Journal*, 1937, 1, 1120.