Sterilization of Instruments Subject to Damage by Moist Heat

Q.—*What are the best and quickest ways of sterilizing surgical instruments, etc., for which moist heat cannot be used—e.g., cystoscopes and other electrical instruments and their cables, powder insufflators, absorbable gauzes?*

A.—The methods for the articles mentioned differ. A powder insufflator should be sterilized by dry heat at 160° C. for one hour. If the bulb and tube must be sterile also, they should be detached and autoclaved separately. It may be added that the powder itself will also require to be sterilized by dry heat unless initially sterile. For any materials for which neither dry nor moist heat is suitable, chemical sterilization is the only alternative. Formaldehyde vapour is the only possibility for complex instruments, especially those with electrical connexions which cannot be immersed in water. If immersion is feasible, the best solution is one containing formalin: that prescribed in the *National War Formulary* is:

Borax	.. ..	15 g.
Formalin	.. ..	25 ml.
Phenol	.. ..	4 g.
Water	.. .. .. to	1,000 ml.

Such solutions produce absolute sterility—i.e., formalin destroys all forms of bacterial life, including spores, but to do this it requires time: six hours' exposure is the minimum. There is no rapid chemical method of achieving this result. If on the other hand it is considered necessary to kill only pyogenic cocci and other non-sporogenous bacteria, and provided that the instrument is clean and has no crevices, disinfection can be carried out in about 15 minutes with any quickly acting disinfectant, such as 75% spirit, 5% phenol, or 2% lysol.

Vaccination and Inoculation

Q.—*A baby, vaccinated at 6 weeks, developed a severe local reaction, and at the same time three or four vaccinia pustules on the feet. The baby made a good recovery and is in every other respect healthy. Is there any reason to suspect that inoculation against diphtheria and whooping-cough is contra-indicated following the severe reaction to vaccination?*

A.—The degree of reaction to vaccination varies considerably in different children, but there is no evidence to suggest that a baby which developed a severe vaccinial reaction should be similarly affected by subsequent inoculations with diphtheria or pertussis prophylactics. Local reactions are more likely to occur with combined diphtheria-pertussis vaccine, and it is therefore suggested that the child should have its inoculations against these two infections separately, preferably commencing at 4 to 6 months of age, with two or three injections of pertussis vaccine at monthly intervals, followed by two injections of A.P.T. or P.T.A.P.

Desensitization to Bee-Venom

Q.—*(1) Is it practicable to desensitize a patient who is abnormally sensitive to bee-stings? (2) If this is not feasible, what other protection is it possible to give to such a patient?*

A.—It is possible to hyposensitize—usually for a period of years—a patient who is abnormally sensitive to the effect of bee-stings, as is shown by the work of R. L. Benson (*J. Allergy*, 1929, **1**, 105; and *Arch. intern. Med.*, 1939, **64**, 1306). In practice one has to consider (1) the risks of a severe reaction from the injections (and the more sensitive the patient, the greater the risk and the less likely is the treatment to be successful); (2) for how long it will be necessary to go on with the treatment; (3) how much of a guarantee can then be given of freedom from reactions to a bee-sting; and (4) for how long, in the absence of further stings or with frequent (or infrequent) further bee-stings, relative immunity will last.

In practice, if it is impossible to carry out the ideal treatment—the prevention of further bee-stings—then hyposensitization carried out by an expert could certainly be expected to reduce the frequency and risks of severe reactions to further bee-stings. In the absence of such treatment, or even after such treatment, protection might be obtained by giving ephedrine and one of the antihistaminics just before exposure to possible bee-stings and certainly as soon as a sting occurs; if the subject receives a sting adrenaline might also be given in order to secure rapid relief.

Tetanus Antitoxin

Q.—*(1) Can any guidance be given on the degree of wound or abrasion in which administration of A.T.S. is advisable? (2) What are the chances of serious or fatal reaction following administration of A.T.S.? (3) Is it dangerous to repeat administration of A.T.S. within a given time?*

A.—(1) Tetanus is a very rare infection in civilian practice, although it must frequently happen that tetanus antitoxin is not given in the kind of penetrating or lacerated wound associated particularly with tetanus. This rarity may be due to the early and thorough surgical toilet which accidental wounds usually receive, although in most hospitals such treatment is supplemented with a prophylactic injection of 1,000–3,000 units of tetanus antitoxin. Infection is less likely to occur with a superfical abrasion, but here, too, the wound should be thoroughly cleansed and any collection of fluid evacuated. Tetanus antitoxin need not be given in such cases, but, since sepsis may predispose to tetanus if tetanus spores are present in the wound, local or systemic antisepsis should be used—e.g., a flavine dressing or an injection of penicillin.

(2) Anaphylactic reactions following the injection of a foreign protein are extremely rare—the risk has been put at 1 in 500,000. Inquiry should always be made for any allergic history—e.g., eczema, urticaria, hay fever, or asthma.

(3) The period of acquired sensitivity following the injection of foreign protein depends on dosage, the degree of purification of the antiserum, etc. With a small prophylactic dose of refined tetanus antitoxin, sensitivity would not ordinarily last for more than a few months. If there is a history of recent injection of antiserum, 1 ml. of 1:1,000 adrenaline should be given immediately before or after the second injection.

Diagnosis of Uniovular Twins

Q.—*Does the presence of a single placenta at the birth of twins establish that they are uniovular?*

A.—The present position with regard to the placental diagnosis of twins is this: fusion of the placentae is certainly not an adequate criterion of monozygosity; it occurs in pairs of unlike sex. On the other hand, von Verschuer (*Proc. roy. Soc. B.*, 1939, **128**, 62) considered that injected preparations of fused placentae may or may not show complete continuity of the two foetal circulations, and there seems to be good presumptive evidence that placental fusion which entails continuity of the capillaries and arterioles justifies a diagnosis of monozygosity.

NOTES AND COMMENTS

Raynaud's Disease.—SAVORY AND MOORE, LTD., London, write: In "Any Questions?" (September 23, p. 738) your expert states: "Local acetyl-β-methylcholine ('carbachol') ionization is helpful in some patients." May we point out, however, that acetyl-β-methylcholine is manufactured by us under the branded name of "amechol"? Carbachol is the official name for carbaminoylcholine chloride. The particular point is that by ionization "amechol" has now completely replaced carbachol, for not only is it of greater therapeutic efficiency, but the side-effects experienced with carbachol seldom occur with "amechol."

Correction.—"*Bact. coli* and Infantile Gastro-enteritis": 1943 in the 2nd para, line 5, of Dr. A. Compton's letter (October 14, p. 889) should read 1947.

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