Absorbable versus Non-Absorbable Sutures

Localio, Casale and Hinton contribute to the International Abstract of Surgery (December, 1943, p. 457), an article describing suture materials which is of interest in connection with squint operations. Absorbable materials comprise those of animal origin of which the best known is catgut. This consists of the submucosal layer of the small intestine of sheep, strips of which are dried, stretched and twisted into a string, and sterilised. If the latter is done by chemicals (chromic acid or a solution of an iodine compound), there is danger of incomplete sterilisation, and Meloney and Clock were able to culture gas forming spore-bearing organisms from a high percentage of catgut supposedly sterile. Heat sterilisation, on the other hand, causes the material to lose some of its tensile strength. Absorption of catgut is a complex process which has not yet been fully explained. The rate of its occurrence is increased in the presence of infection and is slowed by impregnation with chromic acid. Since this is not complete, however, in the coarser strands, it is found, contrary to expectation, that fine chromic catgut is absorbed more slowly than the coarse variety. Silk is the best known non-absorbable suture material, and it has the advantage of being more easily sterilised, and of having its tensile strength increased by autoclaving, though boiling seems to weaken it a little. Linen, on the other hand, appears to decrease in strength on autoclaving and to increase on boiling. Cotton is variable in its tensile strength, owing to variations in the diameters of different varieties of the same stated sizes, and to differences inherent in the materials used. It will not suffice, therefore, for the surgeon to rely on "just any cotton." It is recommended that cotton be wound on machine bobbins which are sterilised by boiling for ten to twenty minutes, and used wet. Handcraft cotton 000 has a tensile strength of 2-5 lb. and can be used for ligating small vessels. The 00 size has a tensile strength of 2-75 lb. and the 0, one of 3-25 lb. Although the tensile strength of silk, size for size, is greater than that of cotton, the decrease of strength of silk and the increase of cotton on wet sterilisation make them comparable.

In America, the trend, in general surgery, has been towards the use of non-absorbable sutures for the following reasons. The chemicals used in preparation of catgut cause necrosis of tissues, interference with healing and a greater exudative reaction. Formation of fibrous tissue is also more rapid with silk than with catgut, and the incidence of wound infection in a series of controlled experiments on dogs was twice as great when catgut was employed. Allergy is another factor which has to be considered; thus Hinton showed that 8 per cent. of cases treated intradermally with sheep-gut antigen showed positive reactions and some other observers,
that after sensitising guinea pigs to catgut, about one third showed disruption of wounds and another third abnormal healing. In a control series of twenty-six animals, all but one healed normally. It is only fair to say, however, that these results are disputed by other authorities. Important points in the use of silk are that it should be twisted rather than braided, untreated or only lightly waxed, should be of the finest material possible and be used as interrupted rather than continuous sutures.

It would be interesting to know the views of ophthalmic surgeons on the issue of silk versus catgut for buried sutures in squint operations. The experience of the writer makes him favour the use of white silk as causing less post-operative reaction and a firmer union of the parts sutured.

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COUNCIL OF BRITISH OPHTHALMOLOGISTS

Annual Report, 1944

The Council presents its report for the year 1943-1944. Owing to the intended reorganisation and reconstruction of the Council, no change in the personnel of its officers was made at the first meeting of the new session.

The Council records with regret the death of Mr. Leslie Paton, an original member.

The Council has completed its deliberations over the Draft Articles of Association of the British Orthoptic Society, and the Articles, Memorandum, and Bye-Laws have now been approved in their final form.

The sub-committee of the Council appointed to consider the question of reconstitution of the Council of British Ophthalmologists completed their deliberations and presented their report which has been accepted by the Council. They have been instructed to consider details.

A sub-committee was set up to consider the Draft Scheme for a National Eye Service drawn up by the British Medical Association. Its representatives attended a Joint Meeting held at the B.M.A. House to discuss the Scheme.

Representatives of the Council attended a meeting with the Council of the Royal College of Surgeons, to discuss the institution of a higher diploma in Ophthalmology. A sub-committee was appointed and drew up a scheme, which has been accepted by the Council and will be forwarded to the Royal College of Surgeons.

The Sub-committee appointed to consult with the Joint Committee of the three Royal Colleges over the question of Consultant status and Assumption B of the Beveridge Report met and, after discussion, appointed their representative in the person of the Honorary Secretary, who has attended the Joint meetings.