**TWENTY-SIX CASES OF EXTRA-CONJUNCTIVAL
IMPLANTS***

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TWO YEARS AGO I described a new implant so designed as to have the minimum of foreign material buried under the conjunctiva, and made the claim that because of this characteristic it could not be extruded (Nairac, 1954). During the period April, 1953, to July, 1956, 26 of these implants have been fitted, and not one has been extruded. The majority of cases have good movement and clean sockets. The Table shows an analysis of the 26 cases.

TABLE
RESULTS IN 26 PATIENTS

Case No.	Age	Date of Operation	Complications	Results
1	69	20.4.53	—	Good Clean socket Some limitation of movement of inferior rectus
2	15	24.6.53	Superior rectus cut out soon after	Repaired successfully Good result when last seen 12 months ago
3	57	13.8.53	Superior rectus cut out	Patient refused further operation Implant still in, other muscles holding well Limitation of elevation
4	30	27.8.53	—	Movement not full, but adequate
5	2½	1.10.53	Infection after measles Inferior rectus cut out soon after	Granulation tissue gave trouble for 3 months, when clear, inferior rectus resutured Still some discharge Fair movement
6	29	12.11.53	Inferior rectus cut out on 9.1.54	Inferior rectus resutured 22.11.54 Now good movement, clean socket Muscles holding
7	10	13.1.54	Granulations over inferior rectus	Cleared in 3 months Still a little discharge Fair movement
8	26	20.1.54	Inferior rectus soon cut out	Inferior rectus resutured 10.2.54 Good result, full movement, clean socket

(*contin.*)

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TABLE (contin.)

Case No.	Age	Date of Operation	Complications	Results
9	16	8.3.54	Further trauma March, 1955	After several attempts at repair, implant removed in February, 1956, because of persistent infection
10	10	17.5.54	Inferior rectus cut out 6.6.54	Inferior rectus resutured 26.7.54 Good result and movement
11	22	30.8.54	—	Some limitation of movement Clean socket
12	18	21.9.54	—	Good movement Clean socket
13	4	13.10.54	Granulation	Still some discharge, but no granulation Good movement
14	20	8.11.54	—	Good
15	52	14.12.54	—	Fair Some limitation of movement
16	46	27.1.55	—	Good
17	10	9.4.55	—	Good movement Clean socket
18	28	27.4.55	—	Good movement Slight discharge
19	11	6.6.55	—	Good
20	21	10.6.55	Granulation	Slight discharge until granulation excised 2.10.56 Socket now clean Good movement
21	41	27.6.55	—	Good
22	2½	17.11.55	—	Slight discharge, which will clear Fair movement
32	8	28.11.55	—	Good
24	34	16.1.56	—	? (moved out of district)
25	33	22.3.56	Threatened cellulitis 9.6.56	Cleared quickly with penicillin injections Socket now clean Fair movement
26	40	7.6.56	—	Some discharge, which will clear Good movement

In one case the implant has had to be *removed* because of intractable granulation tissue formation and threatened contraction, after a further injury 12 months later, when the internal rectus was torn from its bracket.

Attempted repair proved unsuccessful and infection prevailed. I stress that this implant was *removed*, not *extruded*.

An occasional muscle has cut out soon after operation, but has been successfully re-attached. This happens usually when the muscle has been stitched round the bracket either too tightly or inadequately.

To obviate this occasional muscle cut-out a new operative technique has been evolved which gives very satisfactory results.

Instead of attaching each muscle to its corresponding bracket as was done previously (Fig. 1), opposite muscles after passing through their individual brackets are attached to each other behind the implant and under the conjunctiva (Fig. 2). After enucleation of the globe, the threading of the four recti through their respective conjunctival slits, and the suturing of the central conjunctival hole (Fig. 3), the superior rectus is passed through its corresponding bracket of the implant from outside in, threaded back through its own conjunctival slit, and passed behind the conjunctiva and out through the conjunctival slit of the inferior rectus. It is then threaded through the bracket corresponding to the inferior rectus from inside out, and stitched firmly with catgut to the inferior rectus muscle. Fig. 4 shows the positioning and suturing of the muscles. The internal and external recti are then dealt with in a similar manner. The portion of the bracket covered by

FIG. 1.—Old technique (Nairac, 1954; Fig. 4).

FIG. 2.—New technique.

FIG. 3.—The four recti drawn through slits in the conjunctiva (Nairac, 1954; Fig. 3).

FIG. 4.—Method of suturing opposite muscles.

muscle is next allowed to slip back through the slits, and the four slits are carefully sutured over the muscles.

The claims that I make for this type of implant are that it is simple, affords better mobility than any type of totally buried implant, lies in a usually clean socket when simple hygiene is applied, can be used on patients of any age, and will remain *in situ* even when one muscle cuts out (Case 3). There is no evidence after 3½ years of any thinning of the tissues over the embedded bracket, and this series more than disposes of the criticisms that extrusion would occur within "1 to 2 years at the most" (Choyce, 1954), ulceration would occur at the point of entry of the brackets (Arruga, 1955).

REFERENCES

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