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REPORT

OF

TWENTY-FOUR CASES

OF

Granular Lids treated by Sequirity.

BY

MYLES STANDISH, M. D.

Reprint from the Fifty-eighth Annual Report to the Massachusetts Charitable Eye and Ear Infirmary for the Year 1883.

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BOSTON:
ALFRED MUDGE & SON, PRINTERS, 24 FRANKLIN STREET.
1884.

REPORT OF CASES OF GRANULAR LIDS TREATED BY JEQUIRITY.

BY MYLES STANDISH, M. D.

First Ophthalmic and Aural Interne.

THE treatment of granular lids and chronic conjunctival inflammations with jequirity promises to be a great relief to the wards of charitable ophthalmic institutions, for by it the time necessary for the cure of a large proportion of such cases is shortened from several months to a few weeks. And inasmuch as the same result is obtained by a smaller expenditure on individual patients, insomuch is the usefulness of such institutions extended.

The drug is called jequirity from its Brazilian name, but the botanical name is Abrus precatorius. The portion of the plant used is the seed, a small, round red bean or pea, having a round black mark at the point of attachment to the pod. It is found in all tropical countries, but is supposed to have been indigenous to India.

For medicinal use the seeds should not be old, but have a bright shining surface. When absolutely fresh the seeds have a waxlike, glistening appearance, and the older they become the more they lose this gloss.

Jequirity has for many years been a popular remedy among the negroes of Brazil and of the West Indies, but until recently has not attracted the attention of the medical profession, although in Rosenthal's *Synopsis Plantarum Diaphoricarum*, published in 1862, on page 1022, an allusion is made to the treatment of diseases of the eye by means of this drug. To De Wecker, however, is due the credit of bringing this treatment prominently to the attention of the profession. His

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articles published in the *Klinische Monatsblätter* attracted universal attention, and many favorable reports have been made by different observers in various countries. A number of cases have also been reported in which the drug has had no action whatever. These latter cases are, undoubtedly, due either to the fact that the seeds were not fresh enough or to an error of preparation. Such an error occurred in a series of cases at this institution which will be spoken of later, in which no result was obtained.

The drug is prepared by macerating the powdered bean in water in the proportion of ten grammes of the bean to five hundred grammes of water. This must be done with cold water and in a large, open-mouthed jar, to allow the free access of air. This maceration is continued twenty-four hours; the solution is then filtered and is ready for use. The preparation must be freshly made. Chemists have succeeded in extracting no active principle which is capable of producing the characteristic inflammation of the drug. In a preparation made as above described, if examined within a few days, there will be found large quantities of a bacillus, and Prof. H. Sattler in a paper published in the *Klin. Monatsbl. für Augenheilkunde*, June, 1883, attributes the inflammation to the bacilli, and the spores produced by them. Temperatures above 36° C. interfered with the development of the bacillus, and boiling makes the infusion useless. If, however, it is again exposed to the air, a weak and not very effective crop of bacilli develop themselves. The infusion, if allowed to stand, becomes thick and the odor changes from that proper to the jequirity to one of putrefaction, and then purifies itself, and if then used upon the conjunctiva is inocuous. Sattler succeeded in cultivating the bacillus in various soils, such as gelatinized blood serum, etc., and the cultivated bacilli after several generations produced an ophthalmia resembling in all particulars that produced by the original jequirity infusion.

A jequirity infusion made entirely free from spores, an ordinary jequirity infusion, and a pure crop of the specific bacillus, were each injected under the skin by this observer. In the first instance there was a mere temporary local swelling, but in the other two cases an abscess was produced containing cheese-like matter and large quantities of the bacillus. Thymol one part to 1,100 rendered the infusion useless. Corrosive sublimate one part to 1,100 prevented the development of the bacillus, but did not destroy the spores nor prevent the ophthalmia. Iodoform had no antiseptic action whatever. A somewhat similar bacillus is found in an infusion of peas, but it has not the action upon the conjunctiva produced by the jequirity infusion, and Sattler's conclusion is that there exists a widespread bacillus which acquires from the jequirity its specific action and retains this activity through succeeding generations. A series of eight cases occurred at this institution in which the drug either produced no inflammation, or a very slight one, and it was afterwards discovered that the apothecary had made the infusion in each case in a closed jar. These cases are not included in the table which follows. The method of application at this institution has been to give the patient a few drachms of the infusion and have him sop the eye with it for fifteen minutes, then the attendant would evert the lids and pass a camel's-hair brush wet with the infusion rapidly two or three times across the conjunctiva of both lids but this latter application after the ophthalmia has somewhat advanced is a painful operation, and, moreover, seems to be entirely unnecessary. The applications were made three times a day. Dr. Fourcher in *L'Union Méd. du Canada*, No. 9, 1883, advocates using the powdered drug dusted into the eye, but admits if any of the particles are allowed to remain in the eye disastrous results sometimes follow.

Jequirity ophthalmia, while resembling to a certain extent

an ordinary purulent ophthalmia, has some distinct differences. About three hours after the first application a watery discharge commences, and in the course of twelve hours this has very materially increased and become of a grayish color; at the end of twenty-four hours a delicate, smooth, thin, white membrane will be found spread over the palpebral conjunctiva and reflected somewhat upon the globe; this becomes thicker, and at the end of forty-eight hours peels off in thick shreds and patches. The membrane appears to be of a croupous character. Where no previous pannus existed the cornea frequently becomes covered with a thin, transparent gray film. The discharge is at this time profuse and thick with clotted pus. There is considerable œdema of the eyelids, often accompanied by photophobia and pain which latter often spreads up over the temporal region. The local inflammation is accompanied by a fever, having a rise of temperature of one degree Fahrenheit, and often connected with loss of appetite and dizziness. Immediately upon the discontinuance of the applications the severity of the symptoms abates, and the patient is generally very comfortable, both as to local and general condition, at the end of twenty-four hours. The ophthalmia is never communicated from one eye to the other. The recovery is progressive and at the end of ten days the lids are smooth and patients report that the feeling of roughness is all gone. If then discharged from the institution they invariably do well and report themselves six months afterward as perfectly well. If, however, they are retained in the institution five or six weeks longer they acquire what seems to be an entirely new crop of fresh exuberant granulations. The use of atropine seems to have a tendency to induce a return of the granular condition. The marked superiority of jequirity ophthalmia over inoculated purulent ophthalmia is due to the fact that in the former we require the stimulus of repeated applications to continue the inflamma-

tion, and that upon the discontinuance of these applications the onward course of the disease is immediately checked.

De Wecker and other writers on this subject state that there is no danger to the cornea from the use of this drug. This does not seem to be strictly true, if the drug is used upon all cases of granular lids, as they present themselves. The experience at this institution is, that out of twenty-four cases of jequirity ophthalmia treated in the year which this report covers, seven cases were followed by ulcerations of the cornea of a more or less serious character. These ulcerations, it is true, did not come on during the applications of the drug, but as they followed invariably in the cases in which there was the largest amount of corneal disturbance, and in those cases in which there was the largest amount of peri-corneal conjunctival chemosis, I think that the jequirity inflammation may be fairly assigned as the cause. These ulcers appeared in from two days to two weeks after the discontinuance of the applications, they were generally in groups, and marked by deep loss of substance, with clear-cut, clean facets; sometimes — although this was exceptional — they were preceded by grayish points of infiltration; they were generally above, and somewhat peripheral in situation, and in one case the ulcers perforated. They in each and every case yielded to treatment, after a protracted course, without any disastrous consequences. The perforating ulcers were the only ones that left any dense corneal opacities. From an analysis of the cases, the causes of this corneal complication would seem to be, — 1st, A previous ulcerative tendency of the cornea of a serious character. 2d, Granulations of such an exuberant character that when the œdema of the lids is superimposed, the fulness of the lids produces a decided pressure upon the globe, and especially upon the cornea. 3d, When the ophthalmia produces excessive chemosis of the ocular conjunctiva. 4th, When the

cornea has received previous injuries from burns, lime, acids, etc. The above conclusions are in part drawn from a considerable number of cases treated in the house since Oct. 1, and consequently not included in this report. It would be well, in this connection, to remember that experiments upon rabbits are reported in which, by the continued use of strong infusions, necrosis of the cornea has been produced.

Cases 14 and 15 are second trials on cases previously enumerated as cases 4 and 5. Our experience of the repeated use of the drug is certainly not favorable. Cases 4, 5, and 6 had previously experienced burns of the cornea. It will be noticed in the above table that chronic cases were much more improved by the use of this drug than acute cases or chronic cases in a stage of acute exascerbation. If the cases which have been treated since Oct. 1 had been introduced into the table, the percentage of complete recoveries would have been very much higher, as latterly acute cases have been excluded from this method of treatment. All the cases that were discharged, well or improved, were written to six months after leaving the house; and, so far as heard from, reported themselves as well and engaged at their usual occupations. Benefit seems to be derived from this treatment by nearly all cases of true granulations, pannus, and papillary hypertrophy, following chronic inflammations. The cases in which it seems undesirable to use it are those in which danger to the cornea is apprehended from previous injuries or serious ulcerations; also in cases of acute florid granulations, with great fulness of the upper lid, as viewed externally. In these cases there is not only danger to the cornea from the pressure of the lids produced by the inflammation, but also this very pressure seems to prevent the inflammation from extending up the entire surface of the conjunctiva of the upper lid, for when the œdema has abated a border extending about

four millimetres from the edge of the lid will be found to be smooth, and from there back to the retro-tarsal fold the granulations will be seen to be untouched. Jequirity ophthalmia is certainly a very rapid method of clearing up a thick chronic pannus, and produces a satisfactory and permanent cure of chronic granulations and old papillary hypertrophy.

No.	Age.	Occupation.	Duration of Disease.	Time in house after applications of Jequirity.	Condition of Conjunctiva.	Pannus.	Vision before Treatment.	Vision after Treatment.	No. of Applications.	Corneal Complications.	Pain, Lachrymation, and other acute symptoms before application of Jequirity.	Result on Conjunctiva.	Result on Pannus.
1	39 years.	Domestic.	15 years.	21 days.	Fine red granulations.	Entire cornea opaque.	Vod. = 0.01	Vod. = 0.1	10	None.	None.	Smooth.	Nearly disappeared.
2	13 "	School-girl.	9 "	21 "	Large rough granulations.	Upper half of cornea opaque.	Vod. = 0.016 Vos. = 0.05	Vod. = 0.2 Vos. = 0.3	9	"	"	A few sharp granulations.	Entirely "
3	14 "	Domestic.	1 "	Developed rubeola in house.	Fine red granulations.	Thin grayish pannus of entire cornea.	Vod. = 0.1 Vos. = quantitative.	Vod. = 0.1 Vos. = 0.1	9	"	Considerable.	Smooth.	Nearly "
4	21 "	Rubber-worker.	6 "	Retained in house for a second trial.	Coarse red granulations	Thin grayish pannus of upper half of cornea.	Vos. = 0.1	Vos. = 0.05	10	"	Considerable, with swelling of upper lid.	Granulations remained.	Increased.
5	34 "	Mason.	15 months.	Retained in house for a second trial.	Fine red granulations.	Thin grayish pannus of upper half of cornea.	Vos. = 0.3 Vod. = 0.1	Vos. = 0.3 Vod. = 0.1	9	"	Great.	Not improved.	Not improved.
6	38 "	Shoemaker.	6 "	30 days.	Coarse granulat'ns.	Vascular pannus, upper half of cornea.	Vod. = 0.016	Vod. = 0.02	9	Small ulcer.	"	Granulations remained, but reduced in size.	Nearly disappeared.
7	34 "	Baker.	16 "	35 "	Coarse and fine granulations.	Upper half of cornea opaque.	Vos. = 0.1	Vos. = 0.6	9	None.	None.	Smooth.	Entirely "
8	26 "	Laborer.	4 years.	30 "	Coarse granulat'ns.	Thin gray pannus over entire cornea.	Vod. = 0.01	Vod. = 0.08	12	"	Slight.	"	" "
9	22 "	Domestic.	2 "	21 "	Fine "	Thin pannus, upper half of cornea.	Vod. = 0.1 Vos. = 0.008	Vod. = 0.4 Vos. = 0.1	9	"	None.	"	" "
10	10 "	School-girl.	4 "	14 "	" "	Dense pannus over upper half of cornea.	Vod. = 0.3 Vos. = 0.1	Vod. = 0.4 Vos. = 0.3	9	"	"	"	Nearly "
11	60 "	Housewife.	3 "	15 "	Coarse "	Thin grayish pannus over up'r half of cornea.	Vod. = 0.08	Vod. = 0.4	8	"	"	"	" "
12	38 "	Shoemaker.	7 months.	60 "	Fine red "	Thin grayish pannus of upper third of cornea.	Vod. = 0.1	Vod. = 0.3	8	Ulcer of cornea.	Great.	Some granulations remaining.	" "
13	34 "	Baker.	6 "	3 months.	" " "	Slight pannus above.	Vod. = 0.3	Vod. = 0.3	8	" "	"	do. do.	" "
14	21 "	Rubber-worker.	6 years.	5 "	Coarse red "	Thick pannus over centre of cornea.	Vos. = 0.05	Vos. = 0.05	8	" "	Considerable.	Granulations remained.	Not improved.
15	34 "	Mason.	15 months.	3 "	Fine red "	Vascular pannus over upper half of cornea.	Vos. = 0.3 Vod = 0.1	Vos. = 0.1 Vod. = 0.05	9	Many ulcers of cornea, one of which perforated.	Great.	" "	Vascular pannus extended.
16	21 "	Weaver.	8 "	11 days.	Coarse whitish granulations.	Thin gray pannus, upper half of cornea.	Vod = 0.1	Vod. = 0.3	9	None.	None.	Smooth.	Entirely disappeared.
17	22 "	Dyer.	1 year.	15 "	Old granulations.	Thin gray pannus, upper third of cornea.	Vos. = 0.1	Vos. = 0.2	9	"	"	"	" "
18	18 "	Mason.	18 months.	13 "	Fine "	None.			9	"	"	"	No pannus.
19	16 "	Orphan.	1 year.	25 "	Old "	None.			9	"	"	"	" "
20	50 "	Pauper.	5 years.	20 "	" "	Thick whitish pannus over upper half.	Vod. = 0.1 Vos. = 0.05	Vod. = 0.2 Vos. = 0.2	9 9	"	"	"	Pannus much thinner.
21	32 "	Housewife.	3 "	3 months.	Large, profuse red granulations.	Vascular pannus, upper half of cornea.	Vod. = 0.1	Vod. = 0.01	9	Several severe ulcers of cornea.	Great.	Granulations still remain.	Thickness and vascularity of pannus increased.
22	33 "	Mill hand.	2 "	19 days.	Old granulations.	Thin gray pannus, upper third of cornea.	Vos. = 0.1 Vod. = 0.2	Vos. = 0.3 Vod. = 0.4	9	None.	None.	Smooth.	Entirely disappeared.
23	18 "	Diver.	2 "	19 "	" "	do. do.	Vod. = 0.2	Vod = 0.4	9	"	"	"	" "
24	51 "	Domestic.	1 "	In house.	Large, profuse red granulations.	do. do.	Vod. = 0.2	Vod. = 0.1	9	Several small ulcers of cornea.	Great.	Granulations still remain.	Increased.