ON ACOINE AS A LOCAL ANÆSTHETIC
IN SUB-CONJUNCTIVAL INJECTIONS.

By ROBERT BRUDENELL CARTER, F.R.C.S. ENG.,
CONSULTING OPHTHALMIC SURGEON TO ST. GEORGE'S HOSPITAL.

THE employment of sub-conjunctival injections has during the last few years attained a well-recognised and important place in ophthalmic therapeutics, but such injections have been used less frequently than circumstances would have justified on account of the pain, always considerable and often severe, which has followed their administration. Even when the eye has been brought well under the influence of cocaine, or even of holocaine, and the actual injection has thus been rendered painless, the pain has asserted itself after the lapse of a short time, and has often continued without abatement for some hours, so as to render the patient exceedingly unwilling to submit to a repetition of the process. This objection may now, I think, be said to be removed.

Sub-conjunctival injection was first practised, if my memory does not mislead me, by Kussmaul of Munich some 25 or 30 years since as a means of promoting the absorption of corneal opacities; and at one time I used it frequently. The liquid employed was a simple solution of sodium chloride with a few drops of which the sub-conjunctival tissue immediately around the cornea was distended. The cases mostly occurred in hospital practice in the eyes of neglected children, and at that time it was necessary to administer chloroform in order to inject with safety. Used in this way there was little or no subsequent pain, but the process was troublesome, the immediate effect was not considerable, and the practice after a time lapsed into oblivion. A few years ago sub-conjunctival injection was re-introduced in a somewhat different form by Dr. Abadie of Paris; or if not re-introduced by him was at least brought into prominence by his advocacy and example. He employed mercuric solutions, carried the needle to some depth by the side of the eyeball, and injected a considerable quantity, such as half, or even the whole, of the contents of a Pravaz's syringe. A somewhat lively controversy was soon afterwards commenced with regard to the value of the method between French and German ophthalmologists, and was conducted, as it appeared to me, upon grounds that were rather national than scientific. Some German writers declared that sub-conjunctival mercurial injections could not be useful, because they had injected rabbits in the prescribed fashion and had not afterwards succeeded in finding any chemical or other evidence of the presence of the mercurial salt within their eyes. In the meanwhile the French, in the most inconsiderate manner, continued not only to use the injections but to cure their patients by means of them, and to cure them more quickly than was usual by any other method of treatment. But, as I have said above, the subsequent pain furnished a great and valid objection to the process, and rendered many practitioners justifiably unwilling to have recourse to it as long as a good result could be expected from the use of milder means.

In the number of *Lx Clinique Ophthalmologique* of June 25th last Dr. Darier, one of the editors of the journal, published the first account which I had seen of a new preparation called acoine, which he declared to be a non-poisonous local anæsthetic having a very prolonged action; and he described several cases in which its use had rendered the sub-conjunctival injection of cyanuret of mercury painless. The statement seemed to me to be so important and the effect so valuable that I obtained a supply of the preparation from Mr. Rogers, of 327, Oxford-street, and my trials of it completely confirm Dr. Darier's assertion. After injecting a mixture of equal parts of a solution of cyanuret of mercury of the strength of 1 in 1000 and of a solution of acoine of 1 in 100 no pain has been produced even when the injection has been a large one and has been followed by considerable chemosis and even by swelling of the lids. Following the example of Dr. Darier the solvent for both preparations was sterile normal saline solution. The conjunctiva was cocainised for the puncture and the injection was made under the strictest precautions for the avoidance of sepsis. The only complaint made has been of a sense of weight and inconvenience from the swelling, which, of course, has passed away in the course of a short time. Dr. Darier's acoine is made by

the establishment of Heyden at Radebeul, near Dresden. It is a white crystalline powder, soluble in water to the extent of 6 parts in 100. The solution keeps well in the dark and is strongly antiseptic. It may possibly interest some readers to know that acoine is a "Diparaanisyl-monophenethylguanidinchlorhydrate," but the fact conveys very little information to me. I am content to know that it promises greatly to facilitate the treatment of some of the more intractable inflammatory infections of the eye and that it takes away the only serious objection to the employment of a method which, in properly selected cases, appears to me to be of great and incontestable value.

Harley-street, W.

TWO HUNDRED CONSECUTIVE CASES OF
DIPHTHERIA TREATED WITH ANTI-
DIPHTHERITIC SERUM.

By A. J. TONKIN, M.B., B.CH. R.U.I.,
ASSISTANT MEDICAL OFFICER, MONSALL FEVER HOSPITAL, MANCHESTER.

THE following is a review of 200 consecutive cases of diphtheria treated with anti-diphtheritic serum. All the cases were examined bacteriologically and all were considered to be diphtheria clinically. A study of the figures generally, and especially of those dealing with age and sex distribution, will show that there was nothing special about the character or type of the cases, which were all treated in the Monsall Fever Hospital, Manchester.

GENERAL MORTALITY.

Of the 200 cases 45 ended fatally, giving a mortality percentage of 22.5. In 15 cases the patients were moribund on admission and died within a period of 24 hours; if these cases be ignored the mortality percentage figure would be 16.2. In 10 other cases the patients died within 48 hours and in five others within 72 hours of their admission and the commencement of antitoxic treatment, making in all 30 deaths within 72 hours of admission. Now, according to the severity of the case, antitoxin shows no marked clinical results within 48 or 72 hours after the commencement of the treatment, and therefore for our purposes here all of these cases should be subtracted from the total number. If this be done the mortality percentage would be represented by the remarkably low figure of 8.8. That this is the figure which should represent the mortality percentage will be shown later when dealing with the day of the illness on which the treatment was begun. 38 of the total number of deaths occurred within seven days of admission and all within 18 days. The length of life in the hospital in each fatal case is shown in the following table:—

Days in hospital before death	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Number of deaths on each day... ..	15	10	5	1	2	3	2	0	1	1	2	1	0	0	1	0	0	1

MORTALITY IN RELATION TO PART AFFECTED.

To illustrate this relationship the cases have been divided into the following groups according to the situation of the membrane: Group 1, pharynx only; Group 2, pharynx and larynx; and Group 3, larynx only.

TABLE A, showing the Mortality in the above Groups for all Cases admitted.

Situation of membrane.	Cases.	Deaths.	Mortality percentage.
Pharynx only... ..	120	19*	15.8
Pharynx and larynx	70	21†	30.0
Larynx only	10	5‡	50.0

* Four died within 24 hours, three within 48 hours, and three within 72 hours of admission. † Seven died within 24 hours, six within 48 hours, and two within 72 hours of admission. ‡ Four died within 24 hours, and one within 48 hours of admission.

Antitoxin was administered immediately after admission in each case, and therefore if the 30 cases dying within 72 hours of admission be subtracted we get all cases dying

within three days of the commencement of antitoxin treatment excluded. Having thus got rid of all cases admitted practically moribund the following table may be drawn up:—

TABLE B, showing the Mortality in the above Groups after subtracting Cases dying within 72 Hours after Admission.

Situation of membrane.	Cases.	Deaths.	Mortality percentage.
Pharynx only	110	9	8.1
Pharynx and larynx	55	6	10.9
Larynx only	5	0	0.0

Table B shows that the mortality percentages under the above circumstances are enormously reduced in each group, the reduction in connexion with the laryngeal cases being very remarkable.

MORTALITY IN RELATION TO AGE AND SEX.
In studying the cases classified according to age-periods it will be observed that the use of antitoxin has not altered the periods at which diphtheria is most fatal nor the incidence of attack according to age and sex. It will also be seen later that the saving of life is entirely in relation to the early commencement of treatment and altogether independent of age and sex.

TABLE A, showing the Percentage of Attacks for Sexes and Age-periods.

—	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.
Male cases	52	33	4	2	4
Female cases... ..	47	37	8	3	10
Male percentage	52.5	47.1	33.3	40.0	28.5
Female percentage	47.4	52.8	66.6	60.0	71.4

TABLE B, showing the Mortality at the Different Quinquennial Age-periods.

—	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.
Cases	99	70	12	5	14
Deaths	28	12	3	1	1
Mortality per-centage	28.2	17.1	25.0	20.0	7.1

TABLE C, showing the Mortality for each Year during the First Five Years of Life.

—	Under 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.
Cases	4	6	27	26	36
Deaths	3	3	11	6	5
Mortality per-centage	75.0	50.0	40.7	23.07	13.8

TABLE D, showing the Mortality according to Age and Sex Distribution.

—	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.
Male cases	52	33	4	2	4
Deaths... ..	17*	4†	0	0	1‡
Mortality per-centage	32.6	12.1	0.0	0.0	25.0
Female cases	47	37	8	3	10
Deaths... ..	11§	8	3¶	1	0
Mortality per-centage	23.4	21.6	37.5	33.3	0.0

* Five died in 24 hours, three died in 48 hours, and two died in 72 hours. † One died in 48 hours and one died in 72 hours. ‡ One died

in 24 hours. § One died in 24 hours, three died in 48 hours, and two died in 72 hours. || Five died in 24 hours and three died in 48 hours. ¶ Three died in 24 hours.

Following here the principle previously introduced of deducting all cases admitted moribund the next table may be drawn up:—

TABLE E, showing the Mortality according to Age and Sex Distribution after deducting all Cases dying within 72 Hours of Admission.

—	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.
Male cases	42	31	4	2	3
Deaths... ..	7	2	0	0	0
Mortality per-centage	16.6	6.4	0.0	0.0	0.0
Female cases	39	31	5	3	10
Deaths... ..	3	2	0	1	0
Mortality per-centage	7.6	6.4	0.0	33.3	0.0

Table D shows male mortality greater than female for the years one to five and female mortality greater than male for the years five to 10. The reduction in the female mortality in Table E for the years one to five is much greater than for males, but this may be, and probably is, more apparent than real.

MORTALITY IN RELATION TO DAY OF ILLNESS ON WHICH ANTITOXIC TREATMENT WAS BEGUN.

This section is extremely useful in deducing the value of antitoxin.

TABLE A, showing the Mortality in Relation to the Day of Illness on which Treatment was begun.

—	First day.	Second day.	Third day.	Fourth day.	Fifth day.	Sixth day.	Seventh day and after.
Cases	0	39	35	29	25	18	54
Deaths	0	2*	4	7	8	5	19
Mortality percentage	0.0	5.1	11.4	24.1	32.0	27.7	35.4

* One died from pneumonia following tracheotomy on the sixth day after treatment was begun, and the other died from measles on the eighteenth day after treatment; neither death was directly due to diphtheria.

The patients dying within 72 hours after commencement of treatment were as follows. 1. Of those dying within 24 hours two were treated on the third day, three were treated on the fifth day, three were treated on the sixth day, and seven were treated on the seventh day and after. 2. Of those dying within 48 hours three were treated on the fourth day, three were treated on the fifth day, and four were treated on the seventh day and after. 3. Of those dying within 72 hours one was treated on the third day, one was treated on the fourth day, and three were treated on the seventh day and after.

TABLE B, showing the Mortality in Relation to the Day of Illness on which Treatment was begun, after subtracting all Patients dying within 72 Hours of Admission.

—	First day.	Second day.	Third day.	Fourth day.	Fifth day.	Sixth day.	Seventh day and after.
Cases	0	39	32	25	19	15	40
Deaths... ..	0	2	1	3	2	2	5
Mortality percentage	0.0	5.1*	3.1	12.0	10.5	13.3	12.5

* This would be 2.5 if the case of measles be ignored.

Table A clearly emphasises the immense importance of early antitoxic treatment in all cases of diphtheria

as well as the importance of its use; thus only two of the patients died when treatment was begun on the second day of illness and both of these can be accounted for otherwise than by the direct toxic influence of diphtheria, one at least had nothing whatever to do with that disease. Again, the mortality percentage of cases treated on the third day of illness is only 11.4, while that of cases treated subsequently does not differ from such as were obtained during pre-antitoxic days. If the percentage mortality of all the cases treated during the first three days of illness be taken, a figure is obtained almost exactly equal to that got by subtracting all cases dying within 72 hours of admission in working the total mortality percentage—namely, 8.1; neglecting the death caused by measles this latter figure would be only 6.7. Again, if all cases dying within 72 hours of admission be subtracted from the numbers on the various days of commencing treatment, as has been done in drawing up Table B, it will be seen that the percentages are reduced all along the line, with the exception of that on the second day, and that after the third day the figure is not far from constant, practically following the same gradations as in Table A, but on a lower scale. Neglecting the death from measles the mortality percentage for the first three days taken together would be 6.7 if taken from Table A and 2.8 if taken from Table B, and that for the rest of the time would be 30.9 if taken from Table A and 12.1 if taken from Table B. These figures also represent the approximate percentages for each individual day; surely this could not possibly be due to coincidence, but must be due to the only common item—namely, the time during the course of the disease at which treatment was begun—that is, on or about the third day.

THE RELATION OF ALBUMINURIA AND ANTITOXIN.

The figures given below clearly demonstrate that the appearance and intensity of albuminuria in diphtheria are markedly affected for the better when the treatment by antitoxin is begun at an early stage in the course of the disease and that it is scarcely altered when treatment has been delayed. The tests have been carried out in the ordinary routine ward work by means of heat with acetic acid as an acidifier. The term "trace" means a slight turbidity, a "cloud" means an opacity, and a "deposit" means a sufficient coagulum to form a deposit at the bottom of the test-tube.

TABLE A, showing the Amount of Albumin according to the Day of commencing Treatment.

Day of disease on which treatment was begun.	Total cases.		Urine suppressed.		No albumin.		Trace.		Cloud.		Deposit.	
	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.
Second day	39	—	16	41.02	17	43.5	3	7.6	3	7.6		
Third day	35	2	5.7	7	20.0	7	20.0	5	14.2	14	40.0	
Fourth day	29	2	6.8	3	10.3	9	31.03	1	3.4	14	48.2	
Fifth day	25	4	16.0	—	—	5	20.0	2	8.0	14	56.0	
Sixth day	18	3	16.6	—	—	2	11.1	3	16.6	10	55.5	
Seventh day and after	54	10	18.5	—	—	4	7.4	4	7.4	36	66.6	

This table shows that of the cases treated on the second day of illness no albumin appeared in the urine in a large proportion (41.02 per cent.) and that a slightly larger proportion (43.5 per cent.) had a trace only, while a very small proportion (7.6 per cent.) had a deposit. It also shows that the further the day of commencing treatment recedes from the first day of illness the more considerable is the amount of albumin appearing in the urine, the percentages of "no albumin" and "trace" steadily decreasing, none of those treated on the fifth, sixth, and seventh days coming in the "no albumin" list, while those having a deposit are large after the second day and increase rapidly until the high figure of 66.6 per cent. is reached for the seventh day and after. Again, the percentage of cases admitted with the urine suppressed steadily increase as we recede from the second day of illness. That antitoxin itself can have no marked effect on the urine is shown by the fact that no albumin occurred in 26, or 13 per cent., of the cases subjected to the treatment.

Following the plan of deducting patients dying within 72 hours of admission Table B may be drawn up:—

TABLE B, showing the Amount of Albumin according to the Day of commencing Treatment after deducting Patients dying within 72 Hours of Admission.

Day of disease on which treatment was begun.	Total cases.		Urine suppressed.		No albumin.		Trace.		Cloud.		Deposit.	
	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.
Second day	39	—	16	41.02	17	43.5	3	7.6	3	7.6		
Third day	32	—	7	21.8	7	21.8	5	15.6	13	40.6		
Fourth day	25	1	4.0	3	12.0	9	36.0	1	4.0	11	44.0	
Fifth day	19	—	—	—	—	5	26.3	2	10.5	12	63.1	
Sixth day	15	—	—	—	—	2	13.3	3	20.0	10	66.6	
Seventh day and after	40	—	—	—	—	4	10.0	4	10.0	32	80.0	

Three were taken from those treated on the third day, four were taken from those treated on the fourth day, six were taken from those treated on the fifth day, three were taken from those treated on the sixth day, and fourteen were taken from those treated on the seventh day and after.

The deductions made above do away with all the cases in which the urine was suppressed with one exception, and that patient died early on the fourth day, thus practically getting rid of all those hopeless cases of diphtheritic nephritis with suppression of urine so common in pre-antitoxic days. All the remainder of the deaths were from amongst those who had a deposit. The percentages in relation to those treated on the second day have not been altered; urines having a "trace" only have been increased throughout, the "deposits" are scarcely altered up to and including the fourth day, after which they increase rapidly until on the seventh day the high figure of 80 per cent. is reached.

The following table demonstrates that the liability to albuminuria is practically the same for each quinquennial age-period:—

TABLE C, showing Albuminuria in Relation to Age-periods.

—	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.
Cases	99	70	12	5	14
Urine suppressed	14	3	3	0	1
No albumin	15	7	1	1	2
Albumin	70	60	8	4	11
Percentage of albumin	70.7	85.7	66.6	80.0	78.5

TABLE D, showing the Week during which Albumin disappeared from the Urine in Relation to the Day on which Treatment was begun.

Day of treatment.	Cases.	Deaths.	No albumin.	Albumin.	Week during which albumin disappeared.					
					First week.		Second week.		Third week and after.	
					Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.
Second day	39	2	16	22*	4	18.1	8	36.3	10	45.4
Third day	35	4	7	24	2	8.3	8	33.3	14	58.3
Fourth day	29	7	3	19	2	10.5	2	10.5	15	78.9
Fifth day	25	8	—	17	—	—	6	35.2	11	64.7
Sixth day	18	5	—	13	—	—	2	15.3	11	84.6
Seventh day and after	54	19	—	35	2	5.7	6	17.1	27	77.1

* In one case here the albumin had disappeared before death; all other deaths have been excluded in working the percentages as they all had albumin at the time of death.

From this table it will be seen that the urines clearing up during the first and second weeks after admission steadily diminish as the day of treatment recedes from the day of

commencing illness, while those clearing up during the third week and after rapidly increase. It must be remembered that all except two of the deaths occurred amongst cases treated after the second day, that in each case the urine was either suppressed or there was a "deposit" of albumin, and that in all the fatal cases the albuminuria is likely to have been of a persistent character, so that if those cases could be included all the percentages in the later weeks would be greatly increased with the exception of that on the second day of treatment.

The various tables given in this section clearly demonstrate that the earlier antitoxin is administered in the course of the disease the less likely is albuminuria to appear, the less likely is it to be of a severe character, and the more likely is it to disappear rapidly.

TRACHEOTOMY AND ANTITOXIN.

Of the 80 cases showing evidence of laryngeal mischief 42, or 52·5 per cent., required the performance of tracheotomy; 21, or 50 per cent., of these latter ended fatally; 15 of the 21 fatal cases died within 72 hours of admission; if these cases be ignored the tracheotomy fatality is reduced to 22·2 per cent.; seven of the cases were moribund on admission and died within a period of 24 hours. In none of the pharyngeal cases was it noted that the disease had spread to the larynx after the injection of antitoxin.

TABLE A, showing the Mortality of Tracheotomy Cases in Relation to Age.

—	1 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.
Cases	32	8	1	—	1
Deaths... ..	16	3	1	—	1
Mortality per-centage	50·0	37·5	100·0	—	100·0

Thus 50 per cent. of all the cases died and 50 per cent. each of those over and under five years of age; 76·1 per cent. of the cases came within the latter period.

TABLE B, showing the Mortality of Tracheotomy Cases in Relation to the Day on which Treatment was begun.

Day of treatment.	Cases.	Deaths.	Mortality percentage.
Second day	5	2	40·0
Third day... ..	6*	2	33·3
Fourth day	5	0	0·0
Fifth day	4†	3	75·0
Sixth day... ..	4‡	2	50·0
Seventh day and after... ..	18§	12	66·6

* Two died in 24 hours. † Two died in 24 hours. ‡ One died in 24 hours. § Four died in 24 hours, three died in 48 hours, and three died in 72 hours.

TABLE C, showing the Mortality in Tracheotomy Cases in Relation to the Day on which Treatment was begun after excluding all Cases dying within 72 Hours of Admission.

Day of treatment.	Cases.	Deaths.	Mortality percentage.
Second day	5	2	40·0
Third day	4	0	0·0
Fourth day	5	0	0·0
Fifth day	2	1	50·0
Sixth day	3	1	33·3
Seventh day and after	8	2	25·0

The difference between Tables B and C in regard to the tracheotomy deaths occurring amongst cases treated early in the course of the disease and those treated later is remarkable, all the deaths being thrown on cases treated on and after the fifth day in Table C. It must be remembered that the two deaths amongst patients treated on the second day can be accounted for otherwise than by the direct influence of diphtheria—namely, that one died from pneumonia on the

sixth day after treatment and the other from measles on the eighteenth day. Of the other four deaths one died each on the ninth day and the eleventh day from nephritis and one each on the tenth day and fifteenth day from cardiac failure; these latter two were also suffering from nephritis. In each of the cases the tracheotomy was successful. The following list gives the approximate cause of death in each tracheotomy case. The approximate cause only is given because in the majority of cases, and especially amongst those dying just after admission, it is very difficult to state the real cause of death and so the cause given must be taken as the symptom most prominent at the time of death.

Pneumonia.	Measles.	Membrane below tracheal wound.	Nephritis.	Cardiac failure.
1	1	2	3	14

FATAL CASES.

Here, as in the preceding list dealing with tracheotomy deaths, the approximate cause only of death is given, as it is often impossible to allocate each death to any particular cause amongst the many that may lead to a fatal termination besides the direct influence of diphtheritic toxæmia.

Pneumonia.	Other diseases.	Membrane below tracheal wound.	Nephritis.	Cardiac failure.
1	2	2	10	30

POST-DIPHTHERITIC PARALYSIS.

Of the 200 cases treated 16, or 8 per cent., developed paralysis, a remarkably small number. None of these cases ended fatally. The following table shows the incidence of paralysis in relation to the day on which treatment was begun. No cases occurred amongst those treated on the second day, after which there seems to be no advantage as to whether treatment was begun early or late :—

Day of treatment.	Cases treated.	Paralysis cases.	Percentage.
Second day	39	0	0·0
Third day... ..	35	3	8·5
Fourth day	29	3	10·3
Fifth day	25	2	8·0
Sixth day... ..	18	3	16·6
Seventh day and after... ..	54	5	9·2

SYMPTOMS ATTRIBUTABLE TO THE ANTITOXIN.

Erythematous and urticarial rashes occurred in 29, or 14·5 per cent., of the cases treated. The days on which they appeared after the antitoxin was injected are as follows: in 11 cases rashes appeared in from six to 10 days after injection, in 10 cases rashes appeared in from 10 to 15 days after injection, and in eight cases rashes appeared in from 15 to 20 days after injection. Pains in and about the joints occurred in six cases, or in 3 per cent. In two instances an abscess formed at the seat of injection. The plan of injecting a single full dose (4000 units) has been followed.

CONCLUSIONS.

The foregoing figures and statements tend to establish the following results as to the use of antitoxin :—1. The general mortality rate is reduced. The mortality for cases treated during the first three days of illness is reduced to about 3 per cent. and that for all other cases to about 12 per cent. 2. Laryngeal cases treated early are markedly affected for the better, the death-rate being very considerably reduced. 3. The tracheotomy mortality is very much lessened. 4. There is less need for tracheotomy if treatment be begun early. 5. All ages and both sexes are equally affected. 6. The chances of nephritis are lessened. 7. When treatment is begun early albuminuria may

not appear, will probably not be severe, and will disappear soon. 8. Paralysis is lessened for cases treated on the first and second days of the illness. The paralysis mortality is much reduced. 9. Extension of disease to the larynx and parts below was not noted after injection of antitoxin. 10. The only disadvantage noted after its use was a slight discomfort for a few days from urticarial rashes and pains in the joints in a small percentage of the cases. The conclusions arrived at may be taken as a plea for early diagnosis and early antitoxic treatment.

Manchester.

A CASE OF MULTIPLE SKIN FIBROMATA.

By T. FREDERICK PEARSE, F.R.C.S. ENG.

THE accompanying illustration shows a case of multiple skin fibromata in which the greater part of the body was

majority were sessile but a few were pedunculated. The patient was a Mohammedan native of India, aged about 40 years. He said that he had had these tumours more or less since he was 10 years of age and that his mother was similarly afflicted. The cause was put down to a burn. It is worthy of note that there were comparatively few swellings on his legs, but on his head, trunk, and upper limbs the skin was almost completely occupied by them. In addition he had a tumour of the size of a small cocconut at the back of the right hip; this was freely moveable, distinctly circumscribed, and smooth but very hard. This he had had almost as long as the skin tumours.

There is not the slightest appearance or condition to suggest that these tumours are connected with the lymphatics and the entire absence of pain or tenderness as well as their

covered by these curious swellings. They were of various sizes, ranging from that of a pea to that of a small orange; some were rounded, firm, and tough, while others were soft and elastic. They were all freely moveable. The

almost complete covering of the body is surely against their association with nerves. The man's general health appeared good.

Calcutta.