the manager informed me that on three occasions he had put up notices advising the men in respect of this matter. The men regarded this information as being a reflection on their personal habits, and every time the notice was put up it was surreptitiously removed within a few hours. A point which is obvious to us, but less obvious to the layman, is this: oils and grease, stains, etc., cannot be easily removed by soap unless the soap contains an excess of alkali, and perhaps some other chemical solvent, or grit. For obvious reasons it is useless to attempt to reduce the incidence of dermatitis by supplying the employees with a highly alkaline soap, the use of which softens the horny layer of the epidermis, and thereby assists the penetration of deleterious agents. But we are between Scylla and Charybdis in this matter, for the average man greatly prefers to use the soap which will cleanse his hands most rapidly, and if good soap is provided by an employer it is frequently unused. There have recently been put on the market some quite useful non-solid soaps which, if used before work is commenced, coat the hands with a thin layer of fat which, to a slight degree, retards the penetration of deleterious liquids, and may assist in facilitating the removal of dirt when the day's work is done. The application of lanolin to the hands at night is probably one of the simplest and most satisfactory prophylactic measures yet evolved.

There is a fortune awaiting the person who discovers a material which is as flexible as rubber and yet is untearable. At present, the use of gloves often produces what it seeks to obviate. I do not think I am betraying a professional confidence when I tell you that rubber gloves were supplied to some of the men who were working in the construction of the Mersey tunnel, an undertaking which necessitated the use of thousands of tons of cement. But the gloves tore, or the cement entered in some other way, and formed a poultice inside the glove, and the deleterious effect was thereby increased. This criticism necessarily applies to the use of gloves in many trades, other than cement working.

The use of sprays is increasing. Paint and varnish, which formerly were applied with a brush, are nowadays applied by means of high-pressure apparatus with a trigger control, and the number of commercial substances applied by sprays will probably greatly increase. The men who spray are notoriously careless. Consider, for instance, the cellulose sprayers; they remove their respirators whenever they think that they are not under the eye of authority; they do not drink their milk; they are frequently not punctilious about the efficiency of the suction fans which are supposed rapidly to remove the vapour from the atmosphere. In an ideal spraying plant each man works in a separate compartment with an adequate suction fan, so that he is not likely to be splashed by his fellow workmen; but even so, the vapour is diffused over the skin of the head, neck, and arms, and has the same possibilities of penetration as a fine dust. When it is remembered that in eight hours one man with a spray will handle as much paint as a man with a brush will handle in half a week, the necessity for adequate protection of the worker cannot be too strongly emphasized.

Conclusion

We can therefore conclude that so far as occupational dermatitis is concerned, the only prophylactic measures which are of practical importance are the restriction of the use of deleterious agents so far as is possible; the instruction of the employees so far as is possible in preventive measures; and the adequate ventilation systems in those factories where the atmosphere is dust- or vapour-laden. At present the prevention of occupational dermatitis by selection of employees is almost a council of perfection.

Before summarizing what has been said I would like to say that out of a vast range of subjects I have tried to choose those which may be of interest to general practitioners as well as to dermatologists; several very controversial issues have been opened in order to provoke a good discussion. You will remember that I began by suggesting that the science of preventive medicine was born in the sphere of diseases which have cutaneous manifestations; then we passed on to consider an inherited disease, psoriasis; and thereafter made some reference to the prejudicial effects caused by errors of diet. Then some very controversial work on the endogenous eczema of infants was discussed, and finally a few remarks were made concerning the prophylaxis of industrial dermatitis.

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The paragraphs on the prevention of occupational dermatitis are largely quotations from my article on "The Diagnosis of Occupational Dermatitis," *Journal of State Medicine*, 1933, xli, 10.

CERVICAL GLAND TUBERCULOSIS: THE CASE AGAINST SURGERY

BY

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Radical excision of tuberculous cervical glands is an operation performed less often to-day than thirty years ago. Surgeons in general seem disposed to favour conservative measures for certain types of the disease, reserving radical excision for localized glands in the upper deep cervical group, infected presumably by the nasopharyngeal route,⁸ where it is possible to remove also the tonsillar portal of entry. Extirpation of the disease entire is the usual aim, and some authorities^{3 13} hold this to be the only justification for operation.

The practical objections to this ideal are obvious to anyone who has performed or watched the performance of a deep dissection of tuberculous neck glands, which are usually much more extensive than is clinically apparent. It is often difficult to decide where the disease ends and which glands may safely be left untouched; naked-eye appearances are unfortunately not infallible evidence of freedom from tuberculosis. Even the concurrent removal of tonsils and adenoids, 46 per cent. of which will exhibit microscopic tubercles,¹⁹ takes no account of their lymphatic efferents; though actual tuberculosis of lymphatic vessels has never been demonstrated their fluid contents may hold living bacilli. It is therefore possible for even the most searching dissection to overlook some focus from which fresh disease may arise, and that this is common is suggested by the frequency of local recurrence after operation. Miller⁸ found such local recurrence in 23 cases out of 89; and Clute³ in 11 out of 43—that is, 26 per cent. in each series. Out of 83 patients operated on by Grey Turner¹⁴ the disease recurred locally in 15 and in other situations in 4 (23 per cent.).

Recurrence Rates

I believe that close and prolonged observation after operation may show a much higher rate of recurrence. Minor glandular enlargements, possibly subsiding within

a few months or never becoming large enough to attract notice, may be definite evidence of recrudescence; yet a patient will easily overlook a small swelling or forget one that does not persist, and will gladly report years later that he has had no recurrence. I have observed 44 patients subsequent, and in many cases also prior, to operation for tuberculous cervical glands. The former were "notified" cases, while the latter were referred to the surgeon from the dispensary. Thus the dissociated work of several surgeons is represented, no single surgeon being responsible for more than six operations. The patients were all of the "hospital" class and the series is unselected. In every case complete radical incision was attempted, as opposed to such operations as incision and curettage.

In 39 cases the tonsillar group of glands alone was affected, in 2 the submaxillary and in 3 the glands in the posterior triangle (supraclavicular group). In 9 patients more than one operation was performed: 4 had one and 5 had two subsequent operations, and in all these cases diseased glands are still present. Of a total of 55 radical operations there was at some time or another a gross, palpable, local recurrence in 50 cases (91 per cent.). In 38 of these the recurrence became apparent within three months of operation, in 3 within nine months, and in 6 within five years. In every case it was reasonably certain that recurrence was due to spread from the initial focus, incompletely removed, rather than to a fresh exogenous infection. It is noteworthy that 18 of 36 patients observed immediately after operation—that is, 50 per cent.—had a persistent discharging sinus, which is presumptive evidence of residual infection.

Immediate Prognosis

Surgical extirpation, even if it were feasible (other considerations apart), is not necessarily desirable. Scrofula is seldom fatal. Blacklock,² investigating the primary focus in 333 children dead of tuberculosis, found the nasopharyngeal route responsible in only 6 cases (1.8 per cent.), and Smellie,¹¹ in 3 out of 182 cases (1.7 per cent.). Miller⁸ states that a low-grade bacillaemia may develop in the disease, probably, as Krause suggests,⁹ too early for therapeutic anticipation. Acute generalized tuberculosis is, however, quite rare. I have seen it only once, and this was two months after an excision operation (Case 44).

The immediate prognosis is therefore good. Remote extension may result in metastatic tuberculosis—for example, of bones or joints—but I saw this in a series of over 350 cases of cervical gland tuberculosis so infrequently as to regard its occurrence as quite exceptional. The chance of subsequently developing pulmonary tuberculosis is a point much debated. Fishberg⁶ says that scrofula actually appears to confer immunity against phthisis, an opinion ultimately conceded by Wallgren also.¹⁸ The proportion of phthisical patients giving a history of cervical adenitis varies between two extremes: 13 out of 67 according to Dunlop in Edinburgh,⁵ and 20 out of 2,000 according to Wang in America. It is significant that the bovine type of bacillus, found in a proportion of cervical gland tuberculosis varying from 90 per cent. in Scotland to 25 per cent. in Germany,⁸ occurs uncommonly (1 to 2 per cent.) in pulmonary tuberculosis. Whether or not primary cervical tuberculosis is a greater menace, immediate or remote, than the much commoner, usually subclinical, type in the mediastinum or mesentery, there is some evidence that its prophylactic eradication may be ineffective. Of 58 phthisical patients with a history of preceding cervical adenitis Cumming⁴ found that 32 had undergone this operation.

He concludes that "surgical interference cannot therefore be said to be a factor in preventing the occurrence later of a

pulmonary lesion, or of determining a more benign type of lung lesion. Indeed, the figures suggest rather the reverse."

Partial Excision

If complete removal of tuberculous cervical glands is unattainable in practice and theoretically without foundation, there remains a body of opinion in favour of partial excision, in the belief that "glands in other situations may improve with the removal of the main mass of the disease."¹¹ I am unable to support this contention from this present series of cases, the rapidity and grossness of recurrence in most of which suggested exacerbation rather than amelioration of the residual disease. It is maintained that local recurrence of this nature will in time subside, and Stanton and Richards¹² say that

"it is only when the cases are followed for relatively long periods that the remarkably good prognosis of the disease becomes apparent."

This observation is equally true of tuberculous glands which have never undergone operation at all: sooner or later they either shrink, fibrose and calcify, or break down, discharge externally, and ultimately heal. The process of cure may be as important to the patient as the end-result. It usually extends through adolescence and young adult life, when employment or matrimony may depend to some degree on personal appearance. The stigmata of scrofula are the more apt to arouse lay prejudice to-day by reason of their increasing rarity, and Clute³ concludes that "a good cosmetic result is really the first consideration in treatment." Thus Grey Turner,¹⁵ in a series of 73 cases, found the excision scars in 55 "good," in 14 "slightly defective," and in 4 "bad"; Clute, "excellent" in 29 cases out of 43; Hanford,⁷ "completely satisfactory" in 92 out of 131.

Cosmetic Results

The cosmetic results in this series are considerably inferior. Compared with those of Grey Turner, for instance, they appear as follows:

Cosmetic Result:	Good	Moderate	Bad
Present series (43 cases) ...	21 per cent.	30 per cent.	49 per cent.
Grey Turner (73 cases) ...	75 ..	19 ..	6 ..

The disparity between these two series does not necessarily represent a proportionately inferior technique in the group of surgeons responsible. Results of this type depend of necessity on esoteric standards. Beauty is proverbially in the eye of the beholder, and no two observers can be expected to agree as to what exactly constitutes a "good" scar. Objective factors also interfere, as the lapse of time from the date of operation, the complexion, age, and sex of the patient, and the range and illumination by which he is examined.

In order to check any personal bias and to average out as fairly as possible individual variables, I collected a series of 43 cases in which tuberculous cervical glands liquefied and broke down spontaneously, owing to neglect or refusal of treatment in the earlier stages, and compared the cosmetic results with those of surgical excision:

Cosmetic Result:	Good	Moderate	Bad
Surgical excision (43 cases) ...	21 per cent. (9 cases)	30 per cent. (13 cases)	49 per cent. (21 cases)
Spontaneous ulceration (43 cases)	30 per cent. (13 cases)	35 per cent. (15 cases)	35 per cent. (15 cases)

It is clear from these figures that the results of what may be termed natural cure, though often occurring under the worst possible hygienic conditions, are far from being calamitous, and may indeed be actually superior to those of expert surgery.

Table of Results

Case No.	Sex	Year of Birth	Year of Operation	Glandular Group	Operation	Residual Sinus	Local Recurrence	Interval	Cosmetic Result
1	F	1884	1896	L. T.	Excision	?	—		Bad
2	M	1924	1933	L. T.	"	—	+	2 years	Good
3	F	1837	1919	B. S.	"	?	+	17 years	Moderate
4	F	1927	1931	L. T.	"	+	+	4 years	"
5	M	1912	1932	L. Pt.	"	—	+	6 months	Good
6	F	1919	1935	L. T.	"	+	+	Immediate	Moderate
7	F	1920	1934	R. T.	1. "	+	+	"	Bad
			"	"	2. Curettage	+	+	"	"
8	M	1926	1934	L. T.	Excision	—	+	"	Moderate
9	F	1915	1934	R. T.	"	—	+	6 months	Good
10	M	1927	1935	L. T.	"	—	+	3 months	"
11	F	1923	33	B. T.	"	?	+	Immediate	Bad
12	F	1921	1933	R. T.	"	—	+	"	"
13	F	1932	1934	L. T.	"	—	—	"	Good
14	F	1911	1931	R. T.	1. "	?	+	"	Bad
			"	R. Pt.	2. "	?	+	"	"
			"	"	3. "	?	+	"	"
15	F	1911	1930	L. T.	1. "	?	+	"	"
			1931	R. T.	2. "	?	+	"	"
			"	"	3. "	?	+	"	"
16	F	1916	1935	R. T.	"	+	+	"	Moderate
17	M	1926	1934	R. T.	1. "	+	+	"	Bad
			1935	"	2. "	?	+	"	"
			"	"	3. "	?	+	"	"
18	F	1916	1935	L. T.	"	+	+	"	"
19	M	1905	1923	B. S.	"	?	+	5 years	Moderate
20	F	1929	1935	R. T.	"	—	+	Immediate	Good
21	F	1919	1934	L. T.	1. "	+	+	"	Bad
			"	"	2. "	+	+	"	"
			1935	"	3. "	+	+	"	"
22	M	1921	1934	L. T.	"	—	—	"	Moderate
23	F	1922	1931	L. T.	"	?	+	3 years	Bad
24	F	1928	1935	R. T.	"	+	+	Immediate	"
25	M	1930	1934	L. T.	1. "	+	+	"	"
			1935	"	2. "	+	+	"	"
			"	"	3. Curettage	+	+	"	"
26	M	1932	1934	L. T.	Excision	+	—	"	Moderate
27	M	1924	1933	R. T.	"	+	+	2 years	"
28	F	1925	1932	L. T.	"	?	+	Immediate	"
29	F	1913	1934	R. Pt.	"	—	+	9 months	Good
30	F	1905	1934	R. T.	"	—	+	Immediate	Moderate
31	F	1921	1924	L. T.	"	—	+	3 months	Bad
32	F	1912	1924	R. T.	"	?	+	10 years	"
33	F	1920	1935	R. T.	"	+	+	Immediate	"
34	M	1922	1931	L. T.	"	—	+	"	"
35	M	1917	1931	R. T.	1. "	+	+	"	"
			1932	R. T.	2. Curettage	+	+	"	"
36	F	1923	1935	R. T.	Excision	+	+	"	"
37	F	1921	1934	R. T.	1. "	—	+	"	"
			"	L. T.	2. "	—	+	"	"
38	F	1909	1931	L. T.	"	?	+	"	Moderate
39	F	1926	1934	R. Pt.	"	—	—	"	Good
40	F	1902	1910	R. T.	1. "	?	+	10 years	Moderate
			1920	R. T.	2. "	?	+	Immediate	"
41	F	1906	1923	R. T.	"	+	+	5 years	Bad
42	F	1915	1935	L. T.	"	+	+	Immediate	"
43	F	1925	1936	L. T.	"	—	+	"	Good
44	F	1932	1934	B. T.	"	?	+	(died 2 months later of meningitis)	

R. = Right. L. = Left. B. = Bilateral. T. = Tonsillar. S. = Submaxillary. Pt. = Posterior triangle.

This is not to suggest that every case of tuberculous adenitis should be allowed to go untreated.

I have established a routine for dealing with the disease according to its clinical stages, based on comparative results obtained by different conservative measures in common use.^{16 17} When the glands are in the earliest or hyperplastic stage, syrup. ferri iod. is given by mouth. When periadenitis is present, without softening, tuberculin is given by subcutaneous injection. Different tuberculins have been used, each requiring different technique; I have recently employed "tuberculin P.P.D.," a comparatively new preparation, with good results. The disease can usually be arrested when these methods are adopted in the earlier stages. If a cold abscess has formed, either aspiration or incision with drainage is performed, according to indications described in a previous paper, in which the cosmetic results were shown to be very much better than those of surgical excision.

Though treatment on these lines may have to be prolonged over months or even years, it is almost always ambulatory; the patient attends the dispensary when required and need never be absent from work or from school save for this occasional half-hour, which, in my experience, is seldom grudged. On the other hand, the stay in hospital for a surgical operation, often urged as a saving of time,⁹ is actually a period of complete disablement which is no guarantee of the future. Nor are the risks of operation negligible: though the operative mortality is small,¹⁸ injury to nerves occurs not uncommonly during extensive dissections, and of Hanford's 131 cases 13 (10 per cent.) were left with permanent paresis.⁷

Summary

1. Personal observation of 44 patients has led to the conclusion that tuberculosis of the cervical glands is seldom, if ever, completely removed by surgical means, and that so-called "radical excision" is in practice usually a partial operation.

2. This partial excision can only be justified if proved by results to be superior to other methods of treatment. The high rate of local recurrence and the degree of permanent disfigurement due to cicatrization found in this series of cases indicates the reverse. It is also shown from the figures of other observers that the operation does not prevent the subsequent development of pulmonary tuberculosis.

3. Additional disadvantages are the inconvenience caused to the patient by hospitalization, the frequent necessity for repeated operations, and the risk of paresis from nerve injury.

4. It is held that conservative treatment has none of these disadvantages, and ultimately produces results in every way more satisfactory.

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HOMEWORK*

BY

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This paper is based on my seven years' experience as medical officer at Manchester Grammar School, a school with a national reputation for hard work, and one probably accused more than most schools of overworking its boys.

The question of homework looms large in the public eye at the moment, and a great deal of nonsense has been talked and written about it in an endeavour to show that it is a useless and harmful tyranny. Yet the vast majority of parents and (this may seem strange) the vast majority of boys working for matriculation and the higher school examinations are in favour of it, regarding it as a rather regrettable necessity if they are to pass their examinations and acquire necessary scholarships. Members of the teaching profession, and they should know, are emphatic that it is an essential part of education, and although a lot of gibes have been hurled at them to the effect that they have not to do it, yet they have to spend many weary hours correcting it. It ought not to be forgotten that the quick and clever boy enjoys exercising his powers; that often homework is interesting to do. The great point is that it is work done by the boy himself with, or better still without, some slight unskilled help from his parents. The boy is thrown on his own resources, and the work is therefore individual as contrasted with the work done during the day in collaboration with the teacher. In doing homework, therefore, a boy finds his limitations and—even more important—may discover his potentialities.

It is said that homework should be done at school in the form of "preparation," and that school hours should be correspondingly longer; the day school would then be working on the pattern of the boarding school. But there are many serious objections to such a proposal. Homework, on the other hand, has substantial advantages. In the first place, a day school boy doing homework learns to work by himself—that is, he learns the art of private study. A boarding school boy only learns to work under the eye of a master, and rarely, if ever, encounters private study until he has matriculated. He therefore tends to be handicapped in his competition with the day school boy. Moreover, many boarding schools do not press their boys to work, for they are dealing with those who have no economic cares in front of them. They can afford to let a boy go on until he is 17 before he matriculates. In the second place, a day school that is worth while attending has many outside activities, both sporting and highly educational, timed to start at the end of school: debating, dramatic, scouting, music, model railway, literary, scientific, and many others. If "prep." had to be done at school these would have to be discontinued. Whereas in a boarding school work is spread throughout the day from such times as 7.30 a.m. to 8.30 p.m., the work at a day school would be crammed in between some such hours as 9.30 a.m. and 5.30 p.m. Is that good for the boy?

Teachers and Parents

I would admit at once that some masters are inclined to set too much homework, but taking them all round they are very fair; and here let me say in passing that it is the hard-working master who sets the most homework. The lazy one will set little or none, and there

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