

Difficulty in applying tapes was a feature in early cases and with experience became less frequent. Like others,^{6, 12} we found that the initial doubts of the participating surgeons gradually disappeared.

Our results show satisfactory scars in 247 of 262 (94%) tape-closed wounds, and they agree well with those of previous studies. Horton and Duffin¹³ claimed 89% linear healing in outpatient operations on children. Shepherd¹¹ considered that satisfactory scars were obtained in 478 of 507 (94%) thoracic incisions. De Paulis¹⁴ claimed excellent results in 82% and good results in a further 12% of 350 incisions closed with tapes. Though we assessed 15 wounds as being unduly wide none of the patients complained of the scar.

Though we saw no cases of allergy, which confirmed the impression of Skoog,² Gibson and Poate,¹⁵ and Shepherd¹¹ that allergic reactions are virtually unknown, blistering was seen in a few cases. This is caused by undue tension on the wound and has been recorded in most series. It occurred less frequently with increasing experience of the technique and may be eliminated by placing the first tapes parallel to the wound, especially in obese patients or those in whom considerable swelling of the wound is expected.

Subjective patient assessment of wound pain and discomfort showed clear evidence of patient preference for tapes ($P < 0.01$). Patients who have experienced both sutured and taped wounds

have usually expressed a preference for taped closure when asked which they would prefer in the future and also comment that they find it easier to move about in the early postoperative phase.

We believe that taping wounds is a useful technique that could be more widely used in general surgical practice.

References

- 1 Breasted, J. H., *The Edwin Smith Surgical Papyrus*, Vol. 1. Chicago, University of Chicago Press, 1930.
- 2 Skoog, T., *Acta Chirurgica Scandinavica*, 1963, 126, 383.
- 3 Palmer, J. F., *Works of John Hunter*. London, Longman, 1837.
- 4 MacKenzie, D., *Medical History*, 1973, 17, 158.
- 5 Golden, T., *American Journal of Surgery*, 1960, 100, 789.
- 6 Golden, T., Levy, A. H., and O'Connor, W. T., *American Journal of Surgery*, 1962, 104, 603.
- 7 Ordman, L. J., and Gillman, T., *Archives of Surgery*, 1966, 93, 857.
- 8 Forrester, J. C., et al., *British Journal of Surgery*, 1970, 57, 729.
- 9 Elek, S. D., and Conen, D. E., *British Journal of Experimental Pathology*, 1957, 38, 573.
- 10 Marples, R. R., and Kligman, A. L., *Archives of Dermatology*, 1969, 99, 107.
- 11 Shepherd, M. P., *British Journal of Surgery*, 1966, 53, 445.
- 12 Connolly, W. F., et al., *American Journal of Surgery*, 1969, 1, 318.
- 13 Horton, R. E., and Duffin, G. M., *Practitioner*, 1965, 195, 654.
- 14 De Paulis, J., *American Journal of Surgery*, 1967, 113, 469.
- 15 Gibson, E. W., and Poate, W. J., *British Journal of Plastic Surgery*, 1964, 17, 265.

Tuberculosis among Immigrants Related to Length of Residence in England and Wales

Report from the British Thoracic and Tuberculosis Association*

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Summary

Between 1965 and 1971 the notifications of tuberculosis among lifetime residents of the British Isles declined, but among those born in India, Pakistan, and new Commonwealth countries in Africa tuberculosis notifications increased appreciably. Furthermore, the long-held suspicion that among these immigrants the most recent arrivals in England and Wales have higher rates of tuberculosis than those who have lived here longer was confirmed.

Introduction

In 1971 the British Thoracic and Tuberculosis Association (B.T.T.A.) carried out a national survey on the effect of immigration on tuberculosis notifications in England and Wales.¹ The results were compared with a survey carried out in 1965.² The following observations emerged.

(1) For persons born in the British Isles (England, Wales, Scotland, Northern Ireland, and Eire) there was a decrease of 43% in the monthly

number of notifications of tuberculosis between 1965 and 1971. By contrast, for persons born in India, Pakistan, and new Commonwealth countries in Africa and now living in England and Wales there was an increase of 68% in the monthly number of notifications. For those born in the West Indies and elsewhere there was a reduction of 26%.

(2) The 1971 Census³ showed that 95% of the inhabitants of England and Wales were born in the British Isles. They contributed 68% of the notifications of tuberculosis in 1971, the remaining 32% arising from the 5% of inhabitants who were not life-time residents of the British Isles. Even more striking, however, was the observation that those born in India, Pakistan, and new Commonwealth countries in Africa, who constitute less than 2% of the population of England and Wales, accounted for 26% of the notifications in 1971.

(3) In 1971 the notification rate for tuberculosis among those born in India and living in England and Wales was 27 times as high as that for those born in the British Isles (12 times in 1965). For those born in Pakistan it was 54 times as high (25 times in 1965).

The B.T.T.A. survey of 1971 was held in the spring of that year to coincide with the national Census. Data from the Census are now available and allow the analysis of the notifications in 1971 to be extended to compare the occurrence of tuberculosis in immigrants who had recently arrived in England and Wales with the occurrence in immigrants who had been resident for longer periods.

Plan of Survey

Physicians from 440 chest clinics in England and Wales took part and informed the B.T.T.A. of every newly notified case of tuberculosis seen in their clinics between 1 February and 31 May 1971. Altogether 3521 notifications were received (85%) out of the 4126 notifications made to the Department of Health from all sources in England and Wales. A fifth of the 15% not received by the B.T.T.A. were examined (on the basis of information derived from the local health authorities)

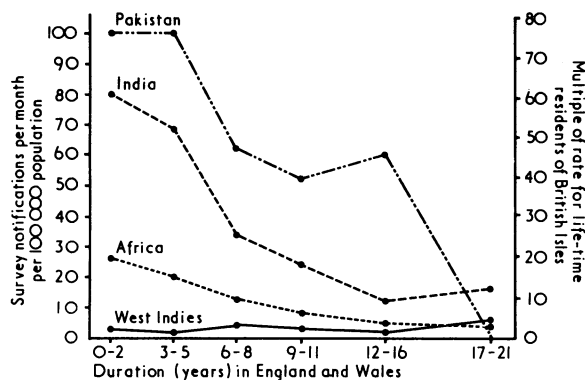
*The survey was carried out by a subcommittee of the Research Committee of the British Thoracic and Tuberculosis Association, whose members were: Dr. P. Stradling (chairman), Professor D. J. Newell, and Drs. A. Pines, F. Ridehalgh, A. R. Somner, V. H. Springett, and D. K. Stevenson. The co-ordinator of the survey was Dr. A. R. Somner, who also prepared the report.

and checked to ensure that physicians did not omit notification to the B.T.T.A. to a greater extent among the life-time inhabitants of the British Isles compared with immigrants. No bias in either direction was found.

Information already derived from the 1971 survey showed that tuberculosis among immigrants from India, Pakistan, and new Commonwealth countries in Africa had risen compared with 1965, while tuberculosis in persons born in the West Indies had fallen. The present analysis of the influence of date of arrival in England and Wales on date of notification of tuberculosis is confined to those notified patients whose birth place was India, Pakistan, new Commonwealth countries Africa, and the West Indies.

Results

The analysis is shown in the chart. Notification of tuberculosis occurred most frequently in immigrants from Pakistan within five years of their arrival in England and Wales. Their notification rate was 77 times as great as that for the life-time residents of the British Isles. After five years their rate of notification, in relation to that for the life-time residents of the British Isles, fell steadily, but even 20 years after coming to England and Wales their rate exceeded that for the native population. Immigrants from India, within two years of their arrival in England and Wales, also showed high numbers of notifica-



Influence of duration of residence in England and Wales and place of birth on tuberculosis notifications (pulmonary and non-pulmonary). B.T.T.A. survey 1971.

tions and a rate 63 times as great as that for the life-time residents of the British Isles. This rate also fell the longer the immigrants had lived in England and Wales. The rates for immigrants from new Commonwealth countries in Africa and the West Indies were smaller but still greater than the rate for the life-time residents of the British Isles.

Discussion

The two surveys carried out by the B.T.T.A. showed that between 1965 and 1971 tuberculosis among the life-time residents of the British Isles declined, that among those residents born in new Commonwealth countries in Africa it increased slightly, and that tuberculosis among those born in India and Pakistan increased appreciably. In addition, the long-held suspicion that among immigrants from India and Pakistan the most recent arrivals have much higher rates of tuberculosis than those who have lived here for longer was confirmed. Possibly the longer immigrants from India and Pakistan live in the British Isles the lower their rate of notification will become. But it may be some years before this is evident. It therefore seems prudent to ensure that all immigrants to the British Isles have a chest radiograph taken on arrival and at intervals for 12 years, particularly those arriving from India and Pakistan. Physicians should maintain a high index of suspicion of the possibility of these immigrants developing tuberculosis for many years after their arrival in the British Isles.

The research committee acknowledges with gratitude the excellent co-operation of so many chest physicians in England and Wales, who because of their large number cannot be individually acknowledged. The committee also thanks the Department of Health and Social Security for their co-operation in meeting the financial expenses of this study. Mrs. Constance Davison helped with the preparation of the report.

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References

- British Thoracic and Tuberculosis Association. *Tubercle*, 1973, 54, 249.
- British Tuberculosis Association, *Tubercle*, 1966, 47, 145.
- Office of Population Censuses and Surveys, *Census 1971 England and Wales Advance Analysis*. London, H.M.S.O., 1972.

Any Questions?

We publish below a selection of questions and answers of general interest

Use of Pectin

Is pectin useful in constipation due to insufficient roughage in the diet? Does it reduce the level of blood cholesterol—if so, by approximately how much? What is the best method of administering pectin and approximately what doses are required? Is it likely to be useful in preventing/delaying/reducing symptoms of thromboangiitis obliterans?

Pectin is probably the least studied and understood component of dietary fibre. It is hard to measure, and very little is known of its concentration in different plant foods. Foods which are relatively rich in pectin are apples and citrus fruits (especially the pith), and it is from these that commercial pectin, as used in jam and jelly making, is extracted. How purified pectin affects bowel function has not been reported, but its gel-forming properties resemble those of well-known "bulk laxatives" such

as Isogel, Fybogel, Normacol, and Metamucil, so pectin could relieve constipation.

Interest has recently revived in the hypocholesterolaemic properties of pectin. In short-term studies a 15 g daily dose lowered serum cholesterol by 0.26 mmol/l (10 mg/100 ml),¹ while at 36 g/day a 0.75 mmol/l (29 mg/100 ml) fall was recorded.² How pectin lowers cholesterol is unknown. It is too early to regard purified pectin as an addition to drugs used to reduce cholesterol in the blood, and unfortunately the amount ordinarily taken in food is much less than 15 g/day.

The pathogenesis of thromboangiitis obliterans is obscure and there is no particular reason to expect pectin to have a role in its prevention or treatment. If pectin turns out to have a therapeutic role, it is more likely to be in ordinary atherosclerosis or at least the hypercholesterolaemia which predisposes to it.

- Keys, A., Grande, F., and Anderson, J. T., *Proceedings of the Society for Experimental Biology and Medicine*, 1961, 106, 555.
- Jenkins, D. J. A., et al., *Lancet*, 1975, 1, 1116.