there is any doubt as to the lesion not being lupus. Von Pirquet's reaction alone leaves one in doubt as to whether there may not be an internal focus of disease.

The local reaction is more definite than that produced by the injection of Koch's Old Tuberculin, and does not lead to the general systemic discomfort caused by the latter.

I am much indebted to Dr. Norman Walker for the permission to publish these observations, and for his help in estimating the value of the results obtained.

CANCER OF THE BREAST: AMPUTATION AND AFTER-TREATMENT BY SECONDARY X RAYS OF KNOWN QUALITY: A SUGGESTION.

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TAKING the general average of trustworthy reports, based on the three years limit, amputation of the breast, done by the most approved methods by the most noted surgeons, shows a rate of cure of about 40 per cent. If we were to extend the limit to five years it probably would not show 20 per cent. of cure. In other words, in three years there are 60 per cent. of recurrences, and in five years probably about 80 per cent. or more of recurrences. Recognizing this fact and the limitations of the most careful surgical technique, many leading surgeons have the mammary regions of patients on whom amputation has been performed irradiated by x rays once a month or once in three weeks, for a considerable time after the amputation. There is good reason to believe that were this course universally adopted, the proportion of recurrences would be sensibly diminished, and the proportion of absolute cures greatly increased. At the recent meeting of the British Medical Association, Sir J. J. Thomson read a most interesting and suggestive paper, in which he dealt with the recent work of Professor C. G. Barkla, who had been able to show that when x rays of any ordinary type strike against a substance, metallic or otherwise, that substance gives off secondary rays of a special quality, and that the same substance struck always produces the same quality of rays.

In the BRITISH MEDICAL JOURNAL, November 12th, 1910, Professor Barkla himself carries the subject a stage further, and states that elements of high atomic weight transform x rays which strike them into a secondary radiation much more absorbable and more intensely ionizing than the incident rays. These secondary radiations are, he states, of two sorts: α radiation, which depends for its quality upon the characteristics of the particular element emitting it, and a β radiation similar to the radiation of radio-active substances. He further states that the physiological effect upon the tissues, normal or pathological, depends upon the amount of the ionization of the tissues in question. Further, he states that if a tissue be injected with a heavy substance like bismuth carbonate, and then irradiated with an x -ray tube in the ordinary way, this substance (bismuth carbonate) will give off x rays of a constant quality, and that these secondary rays will produce a much greater and more intense ionization of the tissue, and hence greater physiological effect, than would have been produced by the irradiation had the bismuth carbonate not been injected. This brings to my mind a suggestion that might be useful to surgeons and radiologists alike—namely, why not, after amputation of the breast, impregnate the wound, before closing it, with sterilized carbonate of bismuth? This, if done not too profusely, would not in any way interfere with the healing of the wound. The bismuth then would become incorporated with the tissues at the very points where recurrence would be most likely, namely, along the lines of excision, and when healed, or even before, one would have all ready prepared the very condition which Professor Barkla says is the ideal one for further treatment by irradiation. If the views of Professor Barkla and Sir J. J. Thomson are correct, and I think all must agree that we must accept them as such, then I should think this well worth trying. It would obviate the necessity of painful injections later

on, and give to x -ray treatment of such cases all the benefits to be derived from treatment by radium. Many years ago bismuth was used as a dusting powder for healing wounds, and quite recently the beneficial effects noticed after injecting sinuses with bismuth for diagnostic purposes must be within the experience of many; hence, I can think of no reason why this suggestion should not be carried out tentatively, at all events, and with probably beneficial results.

A NOTE ON CLEFT PALATE OPERATIONS.

BY

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SOME years ago gastric and intestinal surgery was revolutionized by the introduction of the use of continuous suturing. The success attending this method of suturing depends on the fact that this suture gives a watertight wound on account of the close and uniform approximation of its edges, and that the tissue taken up by the suture is not liable to be strangulated, as in interrupted sutures, with consequent partial or complete failure of union in the wound, due to the necrosis.

The same result is desired in cleft palate operations as in abdominal surgery, and as the continuous suture is so successful and so universally used now in the latter work, I have used it in cleft palate work and in the closure of all wounds in which complete and rapid union without any drainage is essential.

Acting on these principles I have used a continuous suture (No. 1 or 2 silkworm gut) in cleft palate operations with satisfactory results during the last three years, and on account of the good results obtained would never think of going back to the interrupted method.

The operation I perform is the ordinary one with muco-periosteal flaps in the case of the hard palate, and in the soft palate the latter is freed from the posterior margin of the bony palate and its muscles are divided.

Apart from the ultimate good results obtained, it will be found that this continuous suture can be inserted more rapidly and easily than the interrupted one, and that the necessity for great care to insert the stitches exactly opposite each other and to tie the sutures with the correct amount of tension is obviated. The ease and rapidity of operation make the operation less serious, and it can easily be done when the child is 18 months old.

The amount of tension to be put on this suture must be sufficient, after it has been put in and before it is finally tied, to prevent the escape of any bubbles from the nose to the mouth in any part of the line of suture, when the patient is breathing quietly.

The suture should be put in close to the edges of the flaps, only taking up enough tissue to give a firm hold and not enough to invert the margins. The suturing is easiest done from before backwards. The form of needle I use is a small Durham's cleft palate needle, bent at a right angle to the right, and I insert it from below on the right side and from above on the left side, usually rethreading before each introduction. Only about $\frac{1}{4}$ in. of the silkworm gut should be passed through the eye of the needle, as the gut is apt to get frayed by the constant threading and unthreading. The suture can be left in for ten days or longer.

What I claim for the use of a continuous suture is that it gets rid of two of the causes of failure of union in cleft palate operations, namely, (1) imperfect apposition of the flap edges; (2) necrosis of the flap edges from stitch pressure, and that it considerably shortens the operation, thus materially diminishing its risk.

UNDER the will of the late Mrs. Edith Annie Freeman of Knaresborough, Halifax Infirmary and the Royal Albert Asylum each receive a sum of £1,000; while the Royal Bath Hospital, Harrogate, benefits to the extent of £500.

BRIGADE-SURGEON-LIEUTENANT-COLONEL JOHN ROSS MURRAY, M.D., formerly of Rawal Pindi, Punjab, India, and of the Army Medical Service, who saw service in New Zealand in 1860 and 1861, left estate valued at £30,230.