

In order to diagnose the extent of chronic tuberculous sinuses Beck injected a number of cases with a paste composed of 1 part bismuth and 2 parts vaseline, and then had radiographs made. The first case so treated led to the important discovery that the bismuth paste injection has a marked curative effect, apart from its diagnostic value. In his paper read before the International Congress on Tuberculosis, Beck reported 192 cases treated by this method; of these, 64 per cent. were healed, 28.5 per cent. improved, 6 per cent. unchanged, while 1.5 per cent. died during the treatment or after. The method was employed in cases of osteomyelitis of long bones with sinuses, empyema, and tuberculous lung abscesses, suppurative sinuses of the head, sinuses following tuberculous glands, rectal fistulae, and tuberculosis of the kidney with sinuses. Shober employed this method in June, 1908, in the case of a woman of 35 suffering from a psoas abscess sinus, which had persisted since 1902. He had removed a tuberculous kidney from this patient in October, 1907, and the pelvic organs in December, 1907. Treatment commenced in June, 1908. Between June 25th and October 24th she had twelve injections. From the first injection the discharge changed from a characteristic irritating pus to a mild, thin, muco-purulent discharge, which rapidly grew less in quantity. At first he was able to inject about 3 drachms of the paste, finally only 30 to 40 minims; on September 24th the sinus closed completely, and has remained so to date. A similar case of psoas abscess sinus of three years' standing closed after the fifth injection. He has also treated two cases of tuberculous hip and a large sacral abscess with similarly good results. The technique is very simple. The paste consists of bismuth subnitrate 33 per cent., and vaseline 67 per cent. The bismuth should be slowly stirred into the vaseline while hot, but not boiling. When cool, this forms a thick, soft paste, which before using should be heated and thoroughly stirred until thin enough to be drawn into a suitable syringe. Care should be taken that no water enters the sinus, the orifice of which should be washed with 95 per cent. alcohol. The nozzle of the syringe should be placed firmly against the opening; the paste is forced in under moderate pressure until the patient begins to complain. A pledget of gauze is then placed against the opening, and an icebag applied for a short time. No anaesthetic is required, as the injections are usually painless. Beck believes that the action of bismuth subnitrate is bactericidal, chemotactic, and astringent. A systematic examination of the discharges from suppurating sinuses under treatment invariably shows a continuous decrease in the