Use of needles in fractures and epiphyseal separations / by C.R.L. Putnam.

USE OF NEEDLES IN FRACTURES AND EPIPHYSEAL SEPARATIONS

BY

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USE OF NEEDLES IN FRACTURES AND EPIPHYSEAL SEPARATIONS.*

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The difficulty of holding small portions of bone in place is familiar to us all. I have used chromic gut, fine wire, and finishing or cabinet nails. The latter are very useful but have the disadvantage of being of a fixed length. The other methods are useful in suitable cases. In two cases I have used needles with advantage.

In November 1911, I operated on the first case shown this evening. It had been a dislocation backward of radius and ulna at the elbow with intracapsular fracture of the radial neck. (Fig. 1. J. C. Age 16, New York Hospital, Private P.D. Dec., 1911.)

At operation, it was found that the small fragment had turned over so that the articular surface was in contact with the broken end of the shaft.

The wound was deep owing to the swelling which the extreme trauma had produced. With difficulty the head was turned over in its capsule but it turned back again.

I then thought of spearing it with a Hagedorn needle and so holding it. I did so, using two straight needles at slightly different angles. With these I gradually brought the bone into position, and then pushed one of the needles diagonally through the cartilage and soft bone and so on until it touched the inside of the cortex of the shaft. I then broke the needle off between two hemostatic forceps, and pushed the little part still projecting until it went below the surface. The other needle was moved to a suitable place and used in the same way.†

The elbow had been brought into acute flexion before the first needle was pushed home, and was kept so during the closing and dressing of the wound.

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* Read in the Surgical Section of the New York Academy of Medicine, Friday evening, February 7, 1913.

† Reported fully in The Post-Graduate April, 1912.

In this case, the boy being sixteen years of age, the parts united, both contained considerable bone, the needles both worked loose, and came out, one at four and the other at six months. Now, after about a year and half, the boy, as you see, shows no deformity and no limitation of use of his elbow. Except for the scar, there is no evidence, whatever, of his injury.

The second case is one of fracture through the lower end of humerus with rotation of the fragment into a place at right angles with the shaft. (Lincoln Hospital, J. C. Age 8 years, 1912.)

It was reduced with great difficulty through two incisions, and the deformity kept recurring. On account of the severe trauma, I hesitated to introduce foreign bodies, but finally used one Hagedorn and one cambric needle, pushing them home only after the arm had been brought into acute flexion. One needle happened to go its full length as it only struck resistant bone at that depth, the other was broken off as soon as it reached solid bone.

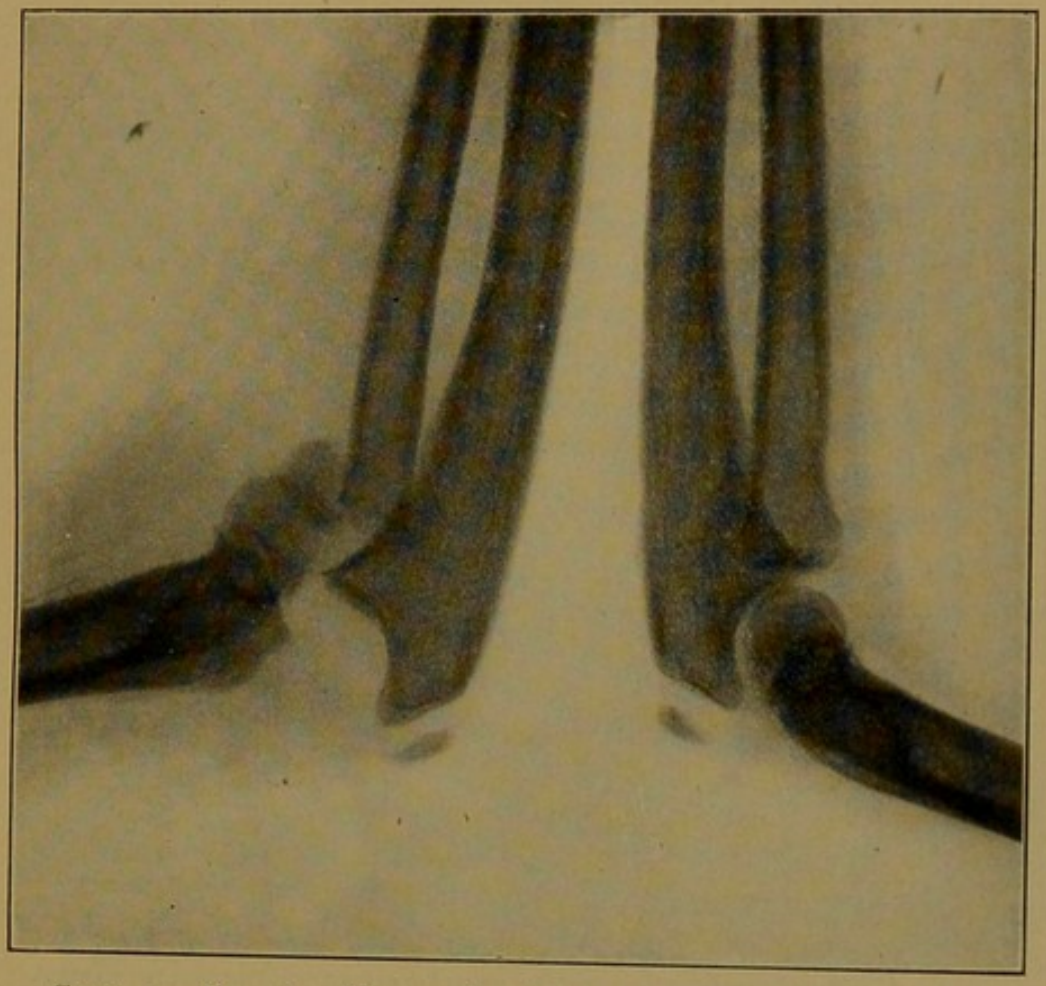
About three months later the needles were removed to please the child's mother. Their points were in hard bone, and the shafts in epiphysis, so they probably would have stayed buried indefinitely.

The points in favor of occasional use of needles are:

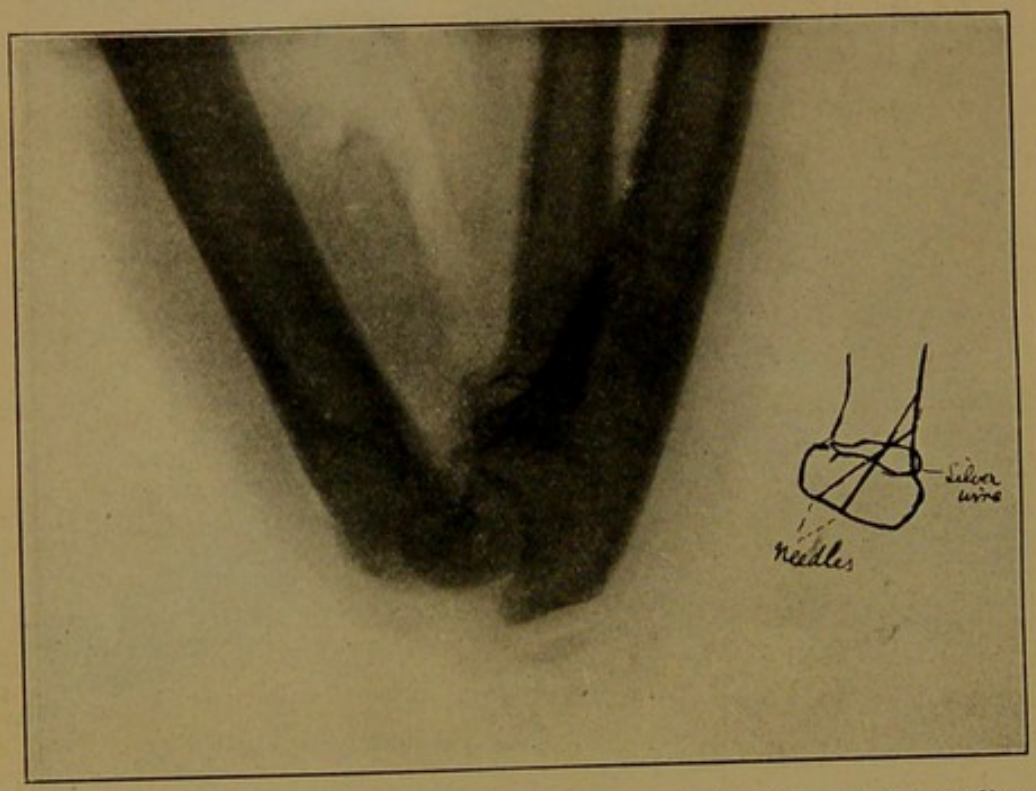
1. Convenience,
2. Facility of introduction,
3. Control by tactile sense,
4. Ease of extraction when desirable,
5. Easy regulation of length.

Suitable cases are those in which small, comparatively soft fragments of bone or cartilage require to be accurately and firmly fastened to larger ones.

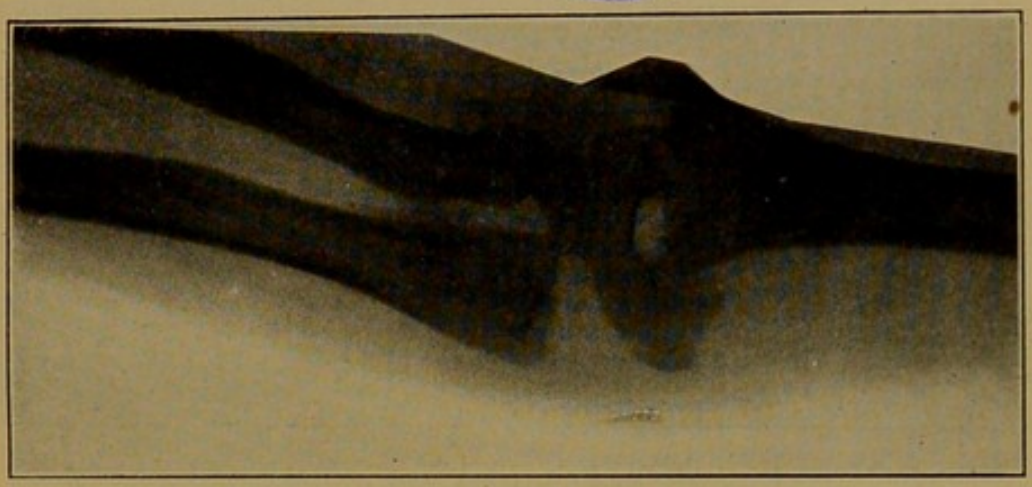
The needles should be so directed that if they work loose, one end will tend to come to the surface while the other end is still in bone. This makes extraction extremely easy.

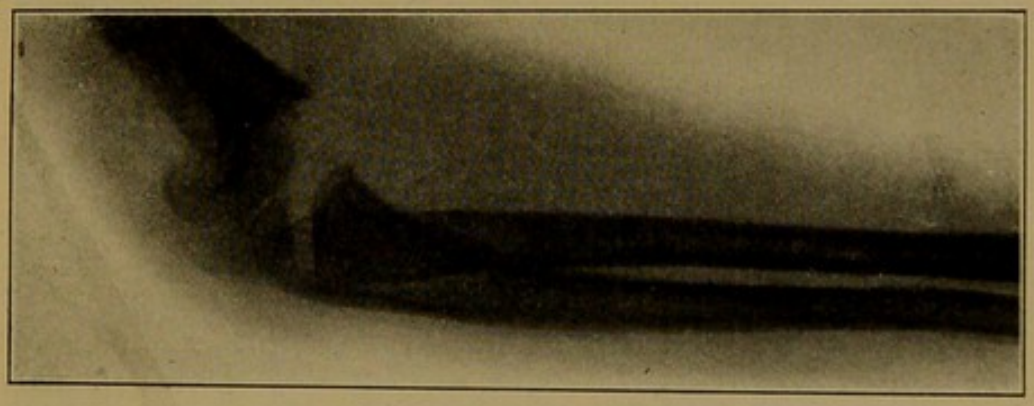


CASE I. FIG. I. Shows the injured arm with the well arm. Dislocation of ulna backward and fracture of the neck of the radius.

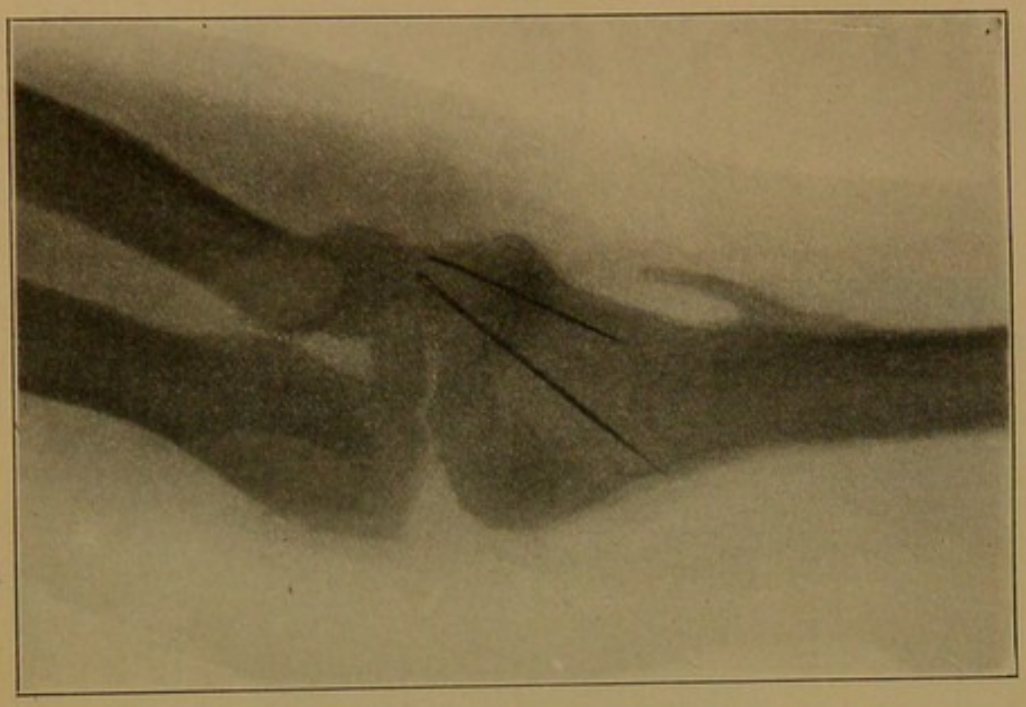


CASE I. FIG. II. Shows elbow in acute flexion, with needles pinning head of radius to shaft, and band of silver wire fastening the splinter of bone in place.

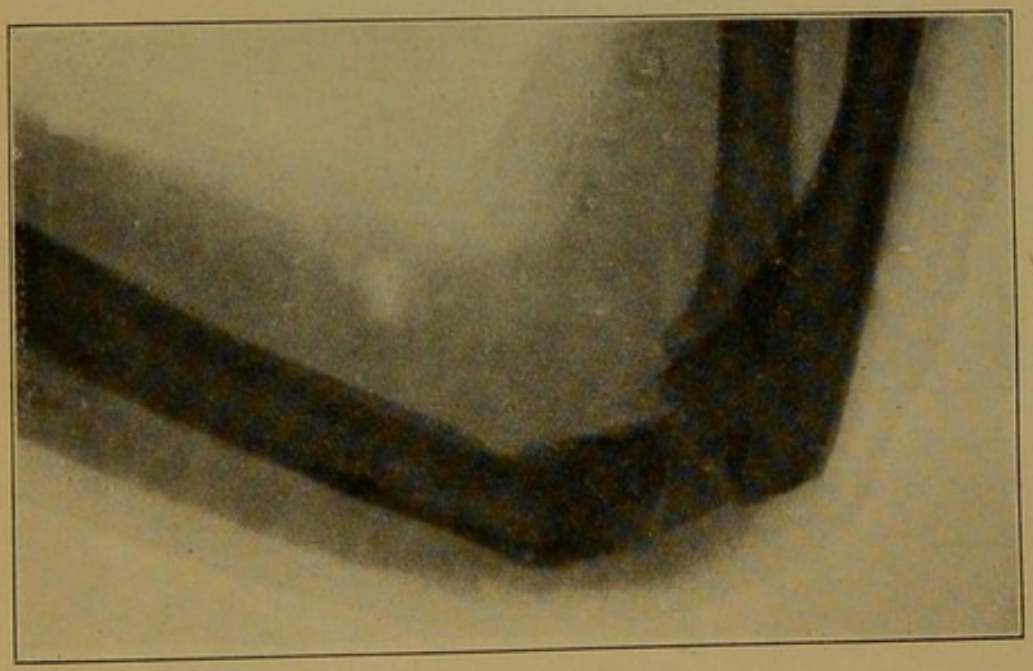




Case 2. Figs. I & II. Shows fracture of lower end of humerous from two directions.



CASE 2. FIG. III. Needles in position.



CASE 2. FIG. IV. Shows condition of bone after needles were removed.