

I had a boy patient recently who had a habit of carrying his arm crooked, and the first application cured the boy of the habit. He simply saw the arm was not so sore as he thought. It helps the patient to find out that the arm can be used. They are afraid to use it.

*Dr. Michael Hoke.*—The elbow fractures are difficult, as we all know; and, as in all fractures, you have got to get the fragments together and then hold them together. It doesn't seem to me we ought to have any fixed position of putting the arm up. In many of these fractures, putting the arm up straight in plaster is a very desirable thing. One should not be afraid of getting a stiff joint. Most of the limitation of motion is the result of callus being in the wrong place. The straight position, if you just think about the mechanics of it, acts better to hold the fragments in apposition, once they are put in place, than does the flexed position. There are some fractures in which it seems to me it is wise to hold the arm straight for that particular reason.

There is a scheme by which you can accurately hold the break as if you had your finger on it. Make plaster ribbons one-fourth of an inch thick by replicating a plaster bandage. Reduce the fracture and mold with the hands until the fragments are in apposition. Traction with arm straight is made. The ribbons are laid on, one on each side and one



Fig. 16. Case 7.

in front and behind. A few turns of a bandage are made over them. The advantage is that one can make a snug fit without obstructing the return circulation.

When the humerus is broken, if you flex the arm, the parts are so loosely held that the motion of the shoulder joint would dislocate the lower end of the shaft of the humerus and the fragments will become separated. So that there are a lot of them, it seems to me, in which you ought to take in the shoulder joint and the chest as well as the arm. It seems to me that I see a lot of bad jobs that have been done from following the text-books. In every instance it appears that the difficulty has been that the physician didn't clearly see the mechanical principles; that he couldn't think independently about the nature of the mechanical problem.

*Dr. Cohn (closing).*—In answer to Dr. Hoke, I just

want to say that, although I am not a draughtsman, I will make an effort to do something on this board. (Drawing showing the attachments of muscles about the elbow.)

We must not forget the fact that the triceps muscle is attached to the olecranon process, and that the flexor muscles of the forearm have their origin on the internal condyle; that in extension those flexor muscles are tending to bring the lower fragment into the bend of the elbow and increase your deformity. If you flex the arm you relax that and allow the lower fragment to go back "into the position of the greatest stability." (Ashhurst.) The nearer we can approach nature in her effort to get us well the better will be our results. At any rate, the results of Ashhurst, reported in his series of some one hundred cases, show 94 per cent of perfect cures. Cotton, using an obtuse angle, got 25 per cent of perfect results, and nowhere do we find the statistics show such good results obtained by this position of extension.

A good many men tell you they use extension, but you will not find anyone giving statistics of his results. Then another thing—it is much easier to get flexion and extension after the flexed position than it is to attempt to do something after the lower fragment has been pulled into the bend of the elbow by these lower muscles.

This paper was not intended to include any fractures of the bones of the forearms, but just those portions of the lower end of the humerus which form the upper portion of the elbow. I believe that the best indication that the hyperflexed position is the best is that it is the position of greatest natural stability.

#### NAIL OCCLUDING THIRD BRONCHIAL RAMUS; UPPER BRONCHOSCOPY. RECOVERY.\*

By J. W. JERVEY, M.D.  
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A great many successful cases of upper bronchoscopy for the removal of foreign bodies of various kinds have been reported in this country and abroad. Individual technique and instrumental modifications vary within rather broad limits, but the principle of the illuminated tube, through which manipulations with long, delicate instruments are performed, is the basic essential to the *armamentarium chirurgicum* for the operation.

The chief scientific interest and fascination of this work, outside of the saving of human life and the delicate performance of a difficult surgical procedure without the sacrifice of living tissue continuity, lie in the fact that each case, in its presentation for attack, is likely to be imbued with differing problems all its own.

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To the surgeon who would undertake this work, then, the talent of mechanical ingenuity is a valuable asset, indeed, and, besides, he must possess practical skill and experience; and to attain successful and least complicated results, he must be an exponent of consummate manual dexterity. Many a patient has been relieved of a foreign body in the lower air passages, only to succumb to complications attendant upon rough and unskillful manipulations or ill-chosen adaptation of technique. On the other hand, many foreign bodies in the air passages, owing to the nature of the intruders and the manner and place of their lodgment, are easy and simple of removal at the hands of the moderately experienced worker. Yet it is to be remembered that at no time and in no case is the introduction of a bronchoscope to be undertaken without the greatest caution and circumspection, for the accidents that may happen and the results that may accrue therefrom constitute a responsibility that cannot be regarded lightly by those whom experience has taught. The clinical history of the following case, especially remarking the age of the child and the size and position of the foreign body, I have thought to be of sufficient interest to put into the permanent record:

Charlie Ray, white male, aged 3½ years, was brought to my office on August 14, 1912, by Dr. H. T. Scott, of Cowpens, S. C., with a history of having inspired a nail on August 9, five days previously. An X-ray examination by Dr. B. B. Stedley, of Spartanburg, on August 13, showed a large wire nail lying diagonally, head down, about the center of the chest. An X-ray examination (fluoroscope) and photograph were made for me on August 14 by Dr. T. R. W. Wilson, of Greenville, showing the nail lying as seen in the accompanying illustration. Owing to an accidental shortage in the supply of X-ray plates, an ordinary photographic plate was used, and the details of the picture were somewhat indistinct. The negative was, therefore, retouched, and following the evidence obtained by physical examination and the bronchoscopic findings, an approximately schematic tracing was made of the trachea and bronchi, showing the relations of the nail to the passages. A physical examination was made by Drs. Davis Furman and F. Jordan, of this city. The classical symptoms of an active pneumonia were present. Temperature, 102.8; pulse, 146; respiration, 50; dullness and restricted function over lower portion of right lung; cough and rusty sputum. The whole appearance was that of a very sick patient, with anxious facies.

One hour before operation a small dose of morphine and atropine was administered hypodermically. Operation was begun at 4 p.m., under chloroform anesthesia of a degree light enough not to

abolish the cough reflex. (For various reasons my preference in this kind of work is for the Jackson method of bronchoscopy, and, accordingly, his instruments and technique, with inconsequential individual modifications, were used in this case, the only exception being in the laryngeal speculum. I prefer the open speculum, without a slide, as being somewhat simpler and equally as efficient in my limited experience.) Upper bronchoscopy was performed, the five millimeter tube being used, and the nail was located without difficulty and demonstrated *in situ* to the physicians present. It was at once apparent that the point of the nail, directed obliquely upward, was imbedded in the left side of the tracheal wall, a half inch or more above the bifurcation, having evidently been forced into this position by the patient's violent expulsive efforts. Knowing the length of the nail from the information afforded by the X-ray, and the clinical symptoms as shown by physical examination, the reasonable deduction was made that the head of the nail, directed downward, had passed, certainly, the bronchial ramus to the upper lobe of the right lung, and had at least partially passed the ramus to the middle lobe, and must probably be resting in or about the ramus to the lower lobe (see schematic tracing of air passages in illustration). The secretion in the passages was very profuse, and was the source of considerable annoyance and delay, the cough reflex being of invaluable assistance in expelling it, while large cotton swabs were rapidly thrust below the distal end of the tube and brought swiftly back, like a pump valve, removing large quantities of thick, "rusty sputum." The size of the nail was too large to admit of the opening of forceps widely enough through the small tube to be of any assistance in manipulating for the removal of the foreign body. Recourse was had, therefore, solely to the blunt wire hook; and the interesting question arose in the mind as to how to extract with such an instrument a straight-sided, end-presenting body from such a cavity when the distal end of the said body—the only point at which purchase could be secured—was out of sight, and, what was still worse, out of any reasonable expectation of reach. The problem was solved in the following way: The point of the nail, which was not very tightly imbedded, was released by gentle manipulation downward. This proved tedious and trying, as downward pressure on the nail invariably excited the cough reflex, and the cough would instantly thrust the nail back into its first position of diagonal impingement. Patience triumphed in the end, and as the point of the nail was released the bronchoscopic tube was slid quickly down so as to include the nail point in its orifice, preventing a return to the position of election. The

tube was then gently pressed onward until about half of the length of the nail was included in its lumen. The hook was then laid alongside of the nail and firmly rotated on its long axis so as to press the nail snugly to the inner wall of the tube—the rust on the nail being of great assistance by the considerable friction offered—and hook, nail and tube

nurses, insisted upon taking his child home. The little patient, in this critical condition, was taken on a fifty-mile railroad journey to his home. Naturally enough, there was a recrudescence of the pneumonia, of severe character, running a typical course of about nine days, followed by convalescence, reported to me



were withdrawn together in one movement and without mishap. The time consumed in actual operating was approximately thirty minutes, and but for the excessive secretion and almost incessant cough it would have been considerably shorter. The patient was at once put to bed, and active combative treatment for the pneumonitis was instituted. There was no shock or other post-operative complication. There was a remarkably rapid rally immediately following the operation, the temperature two hours later being 98.6; pulse, 120; respiration, 38. At 8 o'clock of the following morning the temperature had risen to 100; pulse, 118; respiration, 50.

The father of the child, a Boeotian bogtrotter, appeared at the hospital at this juncture, and, despite the emphatic objections, protestations, pleadings and finally threats of the superintendent and

by Dr. Scott, the attending physician, without further complications.

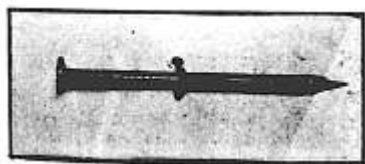
#### DISCUSSION.

*Dr. J. W. Jervey, Greenville, S. C.*—I do not want to add anything, except to say that it might be of interest to you to hear that one of my friends from North Carolina approached me yesterday and said: "I see that you are reporting an upper bronchoscopy case that seemed to be very satisfactory. I bet you did not get a cent for it." "You are right," I replied. "I did expect some payment, but it was in the nature of a promise from the child's father that he would not vote for Gov. Blease; but inasmuch as the latter was elected, I should not be surprised if the man felt sore and went back on his promise."

*Dr. C. A. Thigpen, Montgomery, Ala.*—Dr. Jervey is to be congratulated on his successful operation. I do not think the radiograph does his case justice. I had a very similar case to his in October, 1911. It was that of a child who had inspired a six-penny nail, and the radiograph showed the nail in the same location, in the right bronchus. It was removed by upper bronchoscopy, and the child left the hospital well on the fourth day.

*Dr. Feingold.*—Is there any more discussion? If not, Dr. Jervey will close.

*Dr. Feingold.*—We ought to congratulate Dr. Jervey on his fortunate result, but I think that it was due principally to the resistance of the child. I am sure that you have all had similar experiences. The discussion will be opened by Dr. Thigpen.



Actual Size of Nail.