ORIGINAL ARTICLES.

EVERSION OF VENTRICLE OF LARYNX.

AND CYST INVOLVING LARYNX AND SIDE OF NECK.

BY E. FLETCHER INGALS, A.M., M.D.

CHICAGO.

D. F., aged 39 years, was brought to me May 4, by Dr. Reagan, on account of difficulty in speaking and a cystic tumor about $1\frac{1}{2}$ inches in diameter just below the angle of the jaw upon the right side. The patient gave the following history: In 1890, after some unusual exposure, an abscess had developed in the region where the tumor now presented. It had swollen rapidly and was lanced at the end of a week, giving vent to yellow pus. Again, in 1892, he had had similar trouble. There had been slight swelling at the point ever since. The Doctor stated that he had seen him about a year ago, and found in this same region what appeared to be a sac containing air, which could be made to entirely collapse on pressure. The patient had been subject to tonsillitis when a boy, but gave no history of any other disease; indeed, he said he had never been sick in his life. He complained of a little aching at times in the region of the growth; the appetite and digestion were good, and his weight was greater than ever before. There was no cough; the voice was a coarse whisper attended by

Fig. 1.—Cyst at base of tongue and crowding in the right side of larynx. a peculiar vibration that was subsequently found to be caused by vibration of the epiglottis. There was some dyspnea upon exertion; pulse was 68; temperature 99.4.

Upon examination externally, I found an elastic ovoid tumor about $1\frac{1}{2}$ inches in its various diameters. By pressure it could be nearly dissipated, but it immediately returned when the pressure was removed. I also found that on pressure over the tumor he was unable to speak. Upon examination of the throat the fauces were found slightly congested; there was bulging of the right side of the base of the tongue, crowding somewhat against the epiglottis. The swelling was about five-eighths of an inch in diameter, having a cystic appearance at fissure-like places where the glandular tissue had been parted by the swelling. The swelling extended downward at the right side of the larynx, crowding the epiglottis inward and causing bulging of the ventricular band so as to completely hide the right vocal cord and ventricle upon inspiration (Fig. 1), and to hide the left cord and a part of the left side of the larynx on attempted phonation. The right side of the epiglottis was found to vibrate synchronously with the vibration of the voice.

I inserted the needle of an exploring syringe into the tumor and demonstrated its cystic character. The

following day I introduced an aspirator needle and drew off two ounces of a thick, mucilaginous, semi-transparent fluid, when the cyst appeared to be entirely emptied. I then injected three-fourths of a dram of a mixture of equal parts of carbolic acid and glycerin through the same needle; this was allowed to remain for several minutes and was worked about so as to come in contact with every part of the cyst. It was then withdrawn and the needle removed. The puncture was closed with cotton and collodion dressing. No smarting was caused by the acid in the cyst. Immediately afterward the voice was found to be very much improved, and the vibration had ceased; but upon examination of the larynx I found that although the cystic tumor in the base of the tongue and at the side of the larynx had disappeared, there was a smooth reddish tumor about five-eighths of an inch in length and about three-eighths of an inch in its other diameters, projecting from the right side of the larynx just above the vocal cord. This was demonstrated to be a prolapsed ventricle.

Fearing acute swelling as a result of the injection of the carbolic acid, I had the patient return to my office about five hours later, when I found some edema of the right side of the larynx. I snipped the mucous membrane with cutting forceps in a couple of places, to let out the serum, and sent the patient to the hospital with the direction that cold compresses

Fig. 2.—Eversion of ventricle.

be kept applied to the neck all night. The next day I found the everted ventricle in the same condition, and no appreciable inflammation of the larynx resulting from the treatment of the cyst. I anesthetized the parts with a 10 per cent. solution of cocain, before attempting to remove the ventricle. The cocain made the patient so sick that he retched and vomited, so that the parts could not be completely anesthetized and it was very difficult to use the instruments in the larynx. I attempted, however, to remove the everted ventricle with a cutting forceps, but succeeded only in catching and pinching it strongly without cutting the mucous membrane; but this slightly reduced its size. I then wired a polypus snare—for which I have a long bent tube designed for use in the larynx—with a No. 8 piano wire, and succeeded in passing this loop over the tumor caused by the everted ventricle. With this I cut the protruding tissues off close to the surface. I had the patient keep cold compresses on the neck during the following night.

When he returned to me, a couple of days later, I found the larynx clear of all obstruction, with some depression of the right ventricular band and moderate congestion and thickening of the vocal cords. There had been no inflammation caused by removing the ventricle, and there was no swelling at any part

of the cyst. The voice was still somewhat hoarse in consequence of thickening of the cords, but otherwise he was well. I directed him to use a mild astringent spray in the larynx twice a day and allowed him to go to his home.

36 Washington St.

THE RELATIONS OF THE COLON TO INTRA-ABDOMINAL TUMORS.

BY M. L. HARRIS, M.D.

PROFESSOR OF SURGERY, CHICAGO POLICLINIC.
CHICAGO.

The correct diagnosis of an abdominal tumor is often one of the most difficult problems that confront the surgeon. Nor can the importance of the question be in any way diminished by the statement that an exploratory operation will decide. Notwithstanding the comparative harmlessness of an exploratory celiotomy under proper precautions, no surgeon is proud of having to open the abdomen to diagnose a pregnant uterus, or after thrusting his trocar into a supposed ovarian cyst and drawing it up to find an inextricable mass leading to the pancreas. Still, incidents similar to these are common in the history of surgery.

The object of this paper is not to consider the many means employed in making a diagnosis of an abdominal tumor, but simply to illustrate and emphasize the importance of a simple procedure which is too often neglected.

In arriving at a conclusion as to the nature of an abdominal tumor, the first point to determine is the particular organ or tissue from which it takes its origin. Could this point always be correctly determined, the greatest obstacle to a diagnosis would be overcome. For many years the external topography of the abdomen has been subdivided into various regions or areas by arbitrary lines, and the viscera within, corresponding to each region carefully determined, so that a tumor found occupying a particular region could be referred to an organ normal to that region. Unfortunately, many of the abdominal organs are normally or pathologically movable, and hence are often not found in their habitual locations; and again, many large tumors are so displaced by growth that the region whence they took their origin can no longer be defined. These facts render the subdivision of the abdominal cavity into regions by external lines often of but little value in determining the location of a tumor. What we wish to know is, not the relations of the tumor to arbitrary lines, but its relations to the viscera themselves.

The colon, owing to its peculiar, fixed, circuitous route, and the facility with which it can always be identified, provides us with a most valuable landmark in determining the location of a tumor, and thus, its point of origin.

If we take the inner or mesial layer of the longitudinal mesocolons and the inferior or caudal layer of the transverse mesocolon as a dividing line, we subdivide the abdominal cavity into four regions or areas, namely, the central region, surrounded by the mesocolon; the superior region, lying above, or cephalad of, the transverse mesocolon; and the right and left postero-lateral regions, lying external to and behind the longitudinal mesocolons. While these regions are not at all fixed as regards size and shape, they are quite distinctly fixed in an anatomic sense; and furthermore, as I shall attempt to show, such a subdivi-

sion of the abdominal cavity is of considerable value in the diagnosis of intra-abdominal tumors.

The boundary of these several regions as here defined is quite elastic, and a tumor originating in any one of them may by enlargement come to occupy nearly or quite all of the abdominal space. This, however, can occur only by a displacement of the boundary, and it is the recognition of this displaced boundary that enables us to refer the origin of these tumors to their respective regions. This boundary itself can not be recognized through the intact abdominal wall, but attached to its free border is the colon, which at all times can be easily outlined, and a displacement of one corresponds to a like displacement of the other.

To facilitate the outlining of the colon it should be distended by the insufflation of some harmless gas. The distension of the colon as a means of diagnosis in abdominal tumors is not in itself new, as it has been referred to by numerous writers in a desultory way for many years.

Many writers¹ recommend the distension of the stomach and colon with CO₂ and air in the diagnosis of abdominal diseases of these organs, and (Runeborg) in the diagnosis of abdominal tumors, but we have found no attempt at a systematic handling of the subject until Minkowski's article² on the combined gaseous distension of the stomach and distension of the colon with water, as an aid in the diagnosis of abdominal tumors. He detailed his results in 100 cases of abdominal tumors, and drew the following conclusion: "An abdominal tumor, on distension of the stomach and colon, usually moves in a direction toward the normal location of the organ from which it takes its origin."

While this is applicable to small movable tumors it does not obtain in tumors so large as not to admit of displacement nor in fixed or immovable tumors. In these cases the tumor can not be located by noting the region toward which it is displaced by a colon distended with fluid, but must be located by noting the manner and direction in which the colon itself is displaced or the relation which it bears to the abnormal enlargement. As a means of outlining the colon the insufflation of air or some harmless gas is decidedly preferable to the injection of fluid. Not only is the colon more easily and quickly located by the insufflation of air, but the method is much simpler and easier of application. Besides the annoyance and inconvenience of at times providing for the evacuation of the fluid, many patients are unable to retain sufficient fluid to distend the entire colon without exciting such violent peristalsis as to be painful and thus interfere with a careful examination of the abdomen.

Before practicing insufflation the colon should be thoroughly emptied and the tumor carefully mapped out upon the surface of the abdomen. For insufflating we make use of the ordinary double rubber bulb of a hand atomizer. To the end of the rubber tubing is fixed a glass or hard rubber tip which is inserted into the rectum and surrounded by a towel or napkin to prevent the escape of gas. Air is now gently pumped into the colon and almost instantly passes around to the iliocecal valve. As the air rushes in, distending the colon, it can be frequently outlined by the eye throughout its entire course including the cecum. Should it dip deeply into the loin or be cov-

¹ Ebstein, Volkmann's Klin. Vorträge, No. 155; v. Ziemssen, Deutsche Arch. f. Klin. Med., 1883, Bd. xxxiii, S. 235; Runeborg, Deutsche Arch. f. Klin. Med., 1884, Bd. xxxiv, S. 461.
² Berlin Klin. Woch., 1888, No. 31.