granulations, or "proud flesh." Under a dry dressing the wound heals kindly and quickly.

Now let me say a word about the cases which are seen very early,—those cases in which the best laurels may be won. How is the small collection of pus to be found? There is no redness, no fluctuation, and the pain is diffused. Imagine the focus to be in that little spot under which is the palmar arch. Assuring your patient that you will not hurt him, and asking him not to look at what you are doing, you proceed to touch various points delicately with the end of a probe, beginning at the periphery of this area, and moving in a spiral course until you touch the point where the patient insists he feels the most pain. Having determined this spot, plunge a small tenotomy knife directly downward until the pus wells up alongside of the knife, and then, as you withdraw the knife, widen your incision. Now introduce a small bit of gauze and apply a moist dressing, and the patient will be able to resume work within two or three days.

DIAGNOSIS AND TREATMENT OF ABSCESS OF THE LIVER.

The next case is that of a young man who has been suffering from violent pain in the region of the liver, accompanied by a marked increase in the area of hepatic dulness. The liver is freely movable during respiration, and hence does not appear to be adherent to the abdominal wall. He has continuous fever, which is aggravated towards evening. As his general condition is growing steadily worse, I deem it proper to interfere. Nature, as a rule, is a bad surgeon in the treatment of acute suppurative processes. You know it is a popular belief, and even some medical men still hold the opinion, that external applications will attract pus towards the surface of the body; but it is an entirely erroneous idea, for the pus extends along the lines of least resistance, and this is often along the lymphatics in planes parallel to the surface, instead of towards the surface. Hence the old surgical rule, to evacuate the pus as soon as detected, is the one to follow, and the importance of this rule increases closely in proportion to the depth of the suppurative process. Assuming that in this case the suppurative process is in the parenchyma of the liver, can any one say that the pus will find its way to the abdominal surface of the liver and through the abdominal wall? It is just as likely to break through the diaphragm into the pleural cavity,—a very dangerous condition. Again, the perforation might take place into the general peritoneal cavity, with even more serious consequences. We know that a large number of these abscesses of the liver are confined within the

capsule of the liver, and assume very large proportions before perforation takes place, and that adhesions are usually formed before evacuation of the pus occurs.

In considering this subject systematically, I shall speak first of methods of diagnosis, and secondly of methods of treatment. In making your diagnosis of this condition you must make a careful physical examination, and, more than this, you must have direct evidence of the presence of pus before you undertake to make an incision. This information is obtained by exploratory puncture. If your puncture is negative, then you will consider that the fever and other constitutional symptoms which have been present might be due to malignant disease instead of to an abscess, and you will not make an incision. Again, there may be chills and elevation of temperature from retention of bile, and if you can find even a few drops of pus your hands are greatly strengthened. It is important that you should make your incision, if it be an abscess, at an early stage, otherwise your patient is likely to die of exhaustion, even after the incision. Let me impress upon you, then, the importance of making an early diagnosis of abscess of the liver. Now, what are the means of making the diagnosis? If we have to deal with an intumescence of the liver, and signs indicating firm adhesion between the liver and the abdominal walls, you need have no fear of making an exploratory puncture. The physical examination will show that on deep inspiration and expiration the tumor of the liver does not change its position with reference to the abdominal wall, and I beg you to bear this fact very carefully in mind. Do not plunge in a knife, as you might do in an ordinary abscess elsewhere; this desire to be brilliant is a bad thing, and the modern surgeon foregoes this brilliancy and avoids this plunging of a knife into anything. He works carefully from layer to layer, being guided at every step by the eye. In accordance with this practice, then, you must incise the skin, the fascia, and the abdominal muscles, until you reach the peritoneum, and if there be adhesions you will then observe that all the tissues of the abdominal walls are œdematous and infiltrated, and that serum will ooze from them. This reassures you, and, proceeding cautiously, you will soon be rewarded by finding pus. The wound should be shaped like a funnel, wide at the surface and narrow at its deepest portion. When the pus oozes up through the apex of this wound, you enlarge the opening with a dressing-forceps and establish proper drainage by the insertion of a tube.

Sometimes the adherent part is under the diaphragm, and only a small portion is accessible. Would the method just described be ad-

visable here? No indeed, because some of the pus might escape into the general peritoneal cavity and cause a fatal peritonitis. Where you find that this condensation of the tissues does not extend over the entire wound, and instead the free surface of the liver is exposed, do not carry your incision any farther; even an exploratory puncture with a fine needle is dangerous. Within the last few years the technique of operating for these abscesses of the liver has been much improved. Open the abdominal cavity sufficiently to enable you to ascertain if there be any adhesions of the liver to the abdominal wall, and their location. If you find these adhesions posteriorly, it will be proper to close up your first incision and evacuate the abscess posteriorly. An adhesion always means that perforation is imminent, and if you should find that the abscess threatened to perforate through the diaphragm, you must adopt some other plan of treatment. Formerly it was customary to irritate the abdominal wall by the actual cautery, tincture of iodine, or vesicants, with the idea of exciting adhesions. These methods have been found both barbarous and inefficient. Chemical caustics, such as caustic potash, were applied daily, particularly by French surgeons, until the adhesions were formed, after which the abscess was evacuated by means of a trocar. A German surgeon, Professor Volkmann, suggested the exposure of the liver by laparotomy, protecting the peritoneum by sponges while the liver is punctured. After the withdrawal of the needle, the puncture is watched for a few moments to make sure that no pus escapes, and if pus is found the wound is packed with gauze for a few days, after which the adhesions are usually sufficiently firm to admit of free incision into the liver abscess. This is a good method, and I have practised it myself. Some surgeons have found, however, that in some cases the irritation of the gauze is not sufficient to excite the necessary amount of adhesive inflammation, even after the packing has remained in the wound for a week. Of course, if the gauze do not excite sufficient inflammation, irritant substances may then be applied to the gauze and sufficient inflammation produced, but by adopting this plan much valuable time is lost. Lawson Tait, an English surgeon, has shown that the liver can be treated just like the intestine in colotomy, or like the stomach in gastrostomy, and that it can be attached to the abdominal wall by sutures. Surgeons were afraid in former days to do this on account of the free bleeding from the liver, for such small but continuous hemorrhages may occur, when there is engorgement of the liver from interference with the portal circulation, as to cause death. While, then, this fear of interfering with the liver is well founded, it

has been found that in these cases of abscess of the liver it is comparatively safe to introduce a circle of stitches around the site of your puncture. If the case be a very urgent one, insert your sutures very closely and tightly, and make your incision at once. There is some risk, of course, in doing this, but the surgeon must determine in each individual case whether it is justifiable to take this additional risk. Ordinarily, however, it will be better to pack the wound with gauze for twenty-four hours, and then make your incision, for by this time firm adhesions will have formed. The incision into the liver is generally done with the thermo-cautery knife, because we do not like to use ordinary cutting instruments on the liver. When the incision is made with the cautery-knife there is not apt to be much bleeding. Again, the moment you have incised the liver and evacuated a large quantity of pus, the whole organ with its engorged vessels collapses, just as occurs in tracheotomy, and the tendency to bleed is proportionately diminished. I propose, then, at the hospital to insert the sutures as described, and make an exploratory puncture before making the incision.

There is a class of hepatic abscesses in which the prognosis is bad, even though you interfere surgically. These abscesses usually accompany chronic intestinal affections, especially ulcerative diseases, such as acute or chronic dysentery, where emboli are carried into the liver, and generally cause a number of separate abscesses. Although many of these abscesses become confluent after a time, others will still remain separate, and will not be evacuated by the one incision. These abscesses are only an indication of a grave constitutional condition,—pyæmia; and though you incise the abscesses in various parts of the body, one after the other, the patient will ultimately die. This fact shows the importance of ascertaining very carefully the previous history of the patient, for upon this must depend your prognosis. If the abscess be due to suppuration around an obstruction of the biliary ducts, as from a calculus, or due to an acute suppurative hepatitis from other causes, the prognosis is favorable. In the patient upon whom I propose to operate there is a history of a number of attacks of hepatic colic, and this leads me to believe that there is only a local trouble, and that the patient will probably be cured. This question of liver-abscess is of more importance in tropical countries, because in these countries they are more common, and unfortunately are more often of the metastatic kind, or those associated with pyæmia. I may say that a bold but cautious treatment of abscesses of the liver, other than the metastatic variety, yields very excellent results. There are, to be sure,

very rare cases of spontaneous cure of hepatic abscesses, just as there are occasional instances of spontaneous cure of empyema, but we know now how many cases of empyema formerly died from this let-alone treatment. So it is with liver-abscesses. I have seen a case of acute liver-abscess due to local cause which perforated the diaphragm and discharged its contents into the pleural cavity, yet the patient recovered perfectly without operation, and remained in excellent health for thirty years afterwards.

INCIPIENT COXITIS; SUBLUXATION OF CLAVICLE IN RICKETS, AND COXALGIA; THE PREPARATION AND APPLICATION OF PLASTER-OF-PARIS JACKETS.

CLINICAL LECTURE DELIVERED AT THE NEW YORK POLYCLINIC.

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CASE I.—This child, whose case I present this morning, has had pain at night for two weeks or more. Suppose we look over this case carefully and pronounce on the sickness. In the first place, there is no defect in the gait; the back is perfectly straight. There is apparently no defect in the back or limbs. There are no preputial adhesions: so the child has no genital irritation. The ankle-joint seems perfect; you can flex and extend the hips; you can flex and extend the back and rotate it with perfect ease. Now let us take the left side. Here also we get good movement, and can abduct and rotate. I get my fingers well down into the iliac fossa, but find no abscess there. I can hyperextend each thigh, and the spinal column is quite flexible. There is no fever. The child has pain in the abdomen and in the left lower extremity. The measurements are—right side, fifteen and one-half inches; left side, fifteen and one-half inches: so the limbs are of equal length. The right thigh, four inches from the anterior spine, is ten inches; left thigh, at same point, ten inches: so there is no atrophy of the limb. The mother says the child has had pain for the last two weeks. There is a little more resistance offered on the left side than on the right side; it requires a little more time to get the thigh flexed. Reflex pain at night causes the child to scream during sleep. The characteristic of the night terrors of hip-disease is this,—that you will hear the child shriek, and will go to his bed expecting to find him awake, but he will be sound asleep. When the child first drops asleep after going to bed, the spasms start at once and will wake