During 1875 I saw her only occasionally, as it was only when she was worse than usual that she came for the bromide mixture. It was quite clear then that her mental qualities were becoming dulled, and she was rapidly taking on the characteristic face of an epileptic imbecile. During 1876 another effort to re-establish the periods by means of the galvanic stems was made, but with results less satisfactory than those made in previous years. On February 5, 1877, I was asked to see her at her own house, and found her in a condition of epileptic mania. I advised her removal to an asylum, but her husband and mother declined to act upon my suggestion, despite its being quite evident to them that the injuries she inflicted upon herself during the fits were of so serious a character as to endanger her life, and from her occasional violence during the delirium it was quite possible she might become a homicide. Every month the fits returned with increasing severity, and the attacks of mania fastened themselves almost wholly upon the week, during which a slight loss, lasting for a few hours, indicated that her menstruation should have occurred then. The bromide of potash was pushed to as much as two hundred grains a day without the slightest effect, and other drugs were tried equally without avail.

In July, 1879, her condition was so dreadful that her friends at last determined to send her to an asylum, and I saw her on the 28th. She was almost completely fatuous, her memory was almost gone, the fits seemed to miss only one week in four, the attacks of mania were irregular and continued for varying periods, and menstruation occurred at irregular times. Yet, on the whole, it was said by her mother that she was at her worst very regularly one week out of the four.

It occurred to me that, if my view were correct, that this was a case of menstrual epilepsy really depending upon exanthematic cirrhosis of the ovary, removal of the ovaries—an operation of very ancient date, and which I performed for the first time in this country in 1872—held out some prospect of curing this unhappy woman. At least it could not make her worse than she was, for, even if she died under it, the release would be a grateful one to all concerned. Her relatives, therefore, gave a ready consent to my proposal when I laid it, and the reasoning upon which I based it, before them.

I therefore admitted the patient to the Women's Hospital, and, with the concurrence of my colleagues, I removed the ovaries on August 11th.

This operation—according to my experience one of the most successful operations in surgery, and likely to prove of infinite

service to suffering women—was first performed in 1872 by Professor Hegar, of Leipsic, and he first published his proposal. Within a very few days after Professor Hegar's operation it was performed here by myself, some months before Professor Hegar's account of his case reached this country. Dr. Battey, whose name it is proposed to fix upon this operation, did not operate till after Hegar and myself, and his publication was also subsequent to both of ours.

The operation in the case of E. E—— was made somewhat difficult by her being extremely fat. A somewhat profuse catamenial flow set in on the third day after the operation, and lasted for three days, but without the slightest appearance of a fit. This pseudo-menstruation is very common after ovarian operations, and often recurs for two or three months after removal of both ovaries.

The stitches were removed on the 18th, and she sat up on the 23d of August, twelve days after the operation.

I went away for my holiday, and did not return till the 29th of September, when I found her an altogether different woman. She had had no fits, no more menstruation, was bright and cheer-

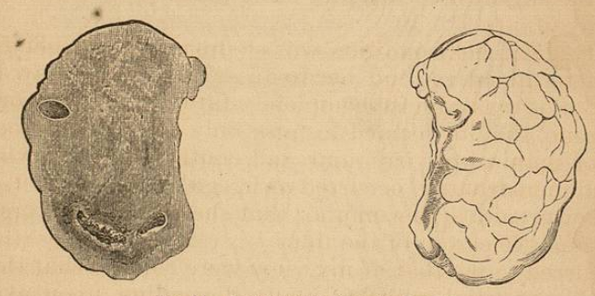

FIG. 24.—Exanthematic cirrhosis of ovary.

ful in her face, her memory returning, and she had altogether lost the dull, heavy, epileptic look which she had before.

I last saw her on October 13th, when she was about to go to her home in Peterborough, and she and her friends were satisfied as to her perfect recovery, and were as grateful as people could be for the improvement in the patient's condition.

One question of course remains: Will the improvement be permanent? I do not know. It seems almost too much to hope for, but I really think it will be. The description of the ovaries by my friend, Mr. Alban Doran, completely justifies my view of the pathology of the case, and my treatment is but a logical con-

clusion from that view. After such an operation one would expect that the fits would probably continue for a few months, and gradually disappear. But here they have disappeared at a blow, and, after nearly three months' absence, I think they may be expected to have finally disappeared.

The ovaries removed were not much smaller than normal ovaries, but they were fissured in a most remarkable manner, so as to resemble in miniature the kidneys of an ox, or the convolutions of the human brain. I sent one up to the College of Surgeons' Museum, and I quote from Mr. Doran's report upon it, as follows:

"There are no signs of 'alveolar degeneration,' but the elongated cells of the stroma are larger than in normal ovaries, and

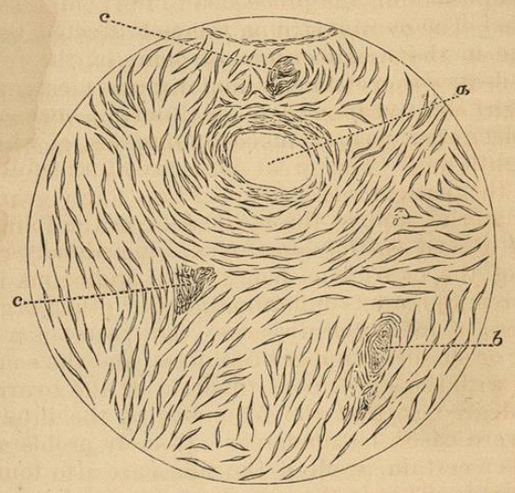

FIG. 25 (drawn by Mr. Alban Doran).—Microscopic appearances of cirrhotic ovary, magnified diameters: *a*, Normal arteriole; *b*, small vessel occluded; *c*, *c*, débris, probably site of vessels occluded by pressure of new cellular tissue.

there are few vessels; the hypertrophy of those that remain, and the bundles of fibrous tissue, point to a cirrhotic change following the exanthematic oöphoritis. There were no morbid cysts, nor extravasation of blood; no pathological breaking down. There were two Graafian vesicles, each about one-twentieth of an inch in diameter, both close to the surface, the periphery of the ovary being slightly denser than the deeper stroma, to the depth of one-eighth of an inch. Near the inner extremity of the ovary is a menstrual corpus luteum which makes a distinct bulge on the surface."

I cannot conclude the notes of this case without restating my belief that, in this operation for the removal of the uterine appendages, we have the means of alleviating an enormous amount of suffering of an otherwise incurable kind.

The conclusions which I have made concerning the influences of exanthematic diseases upon the ovaries have already been confirmed by many interesting observations, chiefly by Dr. Lebedinsky. In the specimens he has examined during the actual process of inflammation, he describes the macroscopic appearances as unchanged both on the surface and in section. He examined the ovaries after having hardened them in Müller's fluid and afterward in alcohol and picric acid. He found, on section, that all the Graafian follicles were in a condition of parenchymatous inflammation, which commenced in turbid swelling of the epithelium, and proceeded to the complete destruction of the cells. The ovarial stroma was not affected beyond being hyperæmic in the neighborhood of some of the follicles. He found the destruction of the glandular tissue most marked in the case of a girl eight years of age, who, during her convalescence from scarlet fever, was attacked by measles, of which she died on the eighth day. The great majority of the follicles in the ovaries of this patient were occupied by a finely granular, structureless material, and in the cortical layer the follicles seem to have been almost entirely destroyed. Lebedinsky regards this affection of the ovaries as being quite analogous to the well-known parenchymatous inflammations of other organs during the progress of infectious diseases. The result is a destruction of a larger or smaller number of follicles, and the consequent interference with the subsequent function of the ovaries in corresponding degree, so that the fecundity of the infected person will, in severe cases, be rendered extremely problematical, and this will be a certain result if the tubes are also found to have been damaged. This is the case in by far the larger number of cases, and the tubes share in the general atrophy of the parts in the subsequent cirrhotic change.

As I have already indicated, chronic ovaritis may be a later stage of moliminal hyperæmia. It may also be the result of acute ovaritis; but the majority of the cases occur from sexual excess and masturbation, or as a sequela of exanthemata and rheumatic fever, and probably of syphilis. I have only once had an opportunity of dissecting a case where I had recognized chronic ovaritis in life, and then it certainly was the result of acute rheumatism. It occurred in the case of a girl seventeen years old, who had suffered from eight or nine attacks of rheumatic fever. In two of them she was under my care as a dispen-

sary patient; and after the recession of the articular affection an attack of pelvic pain came on, which was increased by pressure, and the attack was accompanied by an irregular menstrual flow. The whole passed off in a few days after the application of a blister, but ever afterward her menstruation was irregular, profuse, and painful, and she suffered more or less from the symptoms I shall describe immediately. I regarded the attack as one of mild acute or subacute ovaritis, followed by a chronic stage. She died subsequently of embolism of a cerebral artery, and I found her ovaries large, soft, covered with lymph, and dotted with enlarged follicles, and the peritoneum was thickened around them. The left ovary was partly adherent to the rectum, and it had nearly the whole of the fimbriæ of the corresponding tube glued on to it.

The following case illustrates the same lesion in a more chronic stage of its progress:

H. B——, aged thirty, was placed under my care in September by Dr. Bradley, of Dudley, who told me that when she came under his care she had retroflexion and a variety of somewhat severe symptoms, including pains in the groins, extending down both thighs and into the back, which were much worse just before the menstrual period. He remedied the retroflexion by one of Graily Hewitt's pessaries, but the pains still continued as bad as before, and he sent her to me with a letter containing this sentence: "It seems to me that, in order to completely cure her, it might be necessary to remove one or both ovaries."

The history that she gave was as follows: Her menstruation began at the age of fourteen, and was at first regular and normal. At the age of eighteen, while resident in Paris, she had an attack of rheumatic pleuro-pneumonia, and after that she did not menstruate for seven months. It is not quite clear, but I think it more than likely that at this time she had an attack of ovaritis, because, during her convalescence, she found that she could not for many months straighten herself on account of severe pelvic pains, which existed on both sides, and extended down the thighs, and which prevented her walking any distance for a long time. At the end of the seven months she got somewhat better, and her periods returned, but she suffered intense pain while they were on. Three years before I saw her, while resident in Poland, she had a severe attack of pelvic inflammation, which was at the time regarded as being of a rheumatic character. Since that attack her menstruation has always been extremely irregular and very painful, so that practically for three weeks in every month she has been wholly unable to do anything, or even to walk, and for two years previous to my seeing her she had not been able to follow her occupation of a governess.

I found the uterus fairly normal in position, and down behind it and on either side the ovaries could be felt, large and nodular, just like mulberries. They were extremely tender and evidently adherent. After some further discussion with Dr. Bradley, it was determined to remove the organs, and this operation I performed on October 26, 1880. I found the ovaries adherent, nodulated, studded with minute cysts, and markedly cirrhotic; they were very friable, and their removal was a matter of great difficulty. With them I removed the adherent tubes. She recovered rapidly, but unfortunately during the process of recovery she had a hæmatocele, and though she has improved steadily since the operation, her progress has been, on account of this accident, neither so rapid nor so satisfactory as I could wish, nor as has been the rule in most of my cases. The condition of her ovaries very well illustrates the result of the interstitial form of oöphoritis which is a result of rheumatic disease.

Speaking of chronic ovaritis, Dr. Mathews Duncan gives the following valuable evidence, which I quote in full on account of the precision of the language, the eminence of the author, and most of all because, as Dr. Mathews Duncan does not practise surgery, he may be expected to give his opinions without surgical bias:

"These cases, indeed, generally resist all treatment. Here is a case: A. H——, aged twenty-four, married a year and a half, never pregnant; catamenia regular. She complains of painful menstruation. On examination the left ovary is easily felt, and somewhat swollen and tender. The uterus is natural, except extreme sensitiveness of the mucous membrane of its body. The cervix permits easily the passage of only a No. 7 bougie. After some partially successful treatment of the dysmenorrhœa, she left the hospital, but soon returned, saying she was not cured. Now, she privately made known that what she wished cured was not so much her painful menstruation as pain in sexual connection, a pain which delicacy had prevented her from earlier mentioning. With this in view she was re-examined, and now both ovaries, somewhat prolapsed, swollen, and tender, yet freely mobile, were easily felt. Pressure on either of them produced pain, which she recognized as that of her dyspareunia. She is now under treatment. Counter-irritants externally, and small doses of corrosive sublimate internally, are being used. I can only say I hope she will be cured."

Here, then, we are dealing with a disease which one of the

greatest living gynecologists frankly admits is almost incurable. In hospital practice I assert that it is absolutely incurable in by far the greater number of cases. The only means of arriving at so satisfactory a result is limited to the classes possessing wealth and education, for with them alone is it possible to secure the obedience to directions and the perseverance in treatment by which it is possible occasionally to get a cure. More than this, it is only in a life of luxury that it is possible to prevent the relapses to which this disease is so liable.

The symptoms of the disease vary very considerably, yet there are certain features common to all the cases which are sufficiently definite for reliance to be placed upon them for purposes of diagnosis.

Pain is an inevitable feature, and nineteen times out of twenty it is worse on the left side than on the right; and if it exist on one side only, it is almost certain to be the left which is affected. The explanation which I offer of this peculiarity will be found in the first chapter (p. 8).

This pain is always referred to the groin as the point of origin and of its greatest intensity. It is nearly always persistent, and liable to exacerbation when the patient is in the erect position—when walking, but more particularly when being jolted in a carriage. It also becomes more intense as the organs become congested at the monthly periods. When the pain is intensified from any cause, it extends from its habitual seat down the thighs and round into the back, and very often a reflex pain is excited in the breast of the same side. Sometimes the pain is so great as to prevent the patient straightening herself, and obliges her to walk what little she does in a semi-bent attitude. Pressure upon the seat of pain always increases it, and the slightest touch on the ovary from the vagina gives rise to a peculiar sickening sensation which is very characteristic. For this reason, and also from the fact that her chronically inflamed ovary is nearly always displaced downward, marital intercourse is generally a cause of great pain, and, in the majority of instances, is absolutely unendurable. Generally speaking, the pain lasts throughout the whole period of menstruation; but in some instances it varies in this particular, for in some of the most pronounced cases of chronic ovaritis that I have seen, the pain ceased, or at least was greatly diminished, on the appearance of the menstrual flow.

Menstruation itself is, in most cases, profuse, but in some of the cases I have already detailed this profuse metrorrhagia is due not so much, perhaps, to the ovaritis as to the fundal metritis and the inflammation of the tubes with which it was associated, and it has been the chief cause for interference by surgical operation. Those cases in which hemorrhage is a characteristic are, I believe, those in which the inflammation is of an interstitial character, and probably not of that kind in which the cirrhotic change subsequently occurs. I have found that, in the cirrhotic cases, there is less inflammation of the other organs, and generally an atrophy of them, as of the ovary itself in the later stages; and that, as a consequence, the periods, instead of being profuse, become rather scanty. It is in the former cases that we find the ovary studded with small cysts, whereas in the others the increase in the size of the ovary is of the solid kind.

But as yet there is not, either in my own practice or in that of any others yet published, any sufficiently precise data upon which an absolute conclusion in this matter may be founded; indeed, it has only been of very recent time that we have been able to see these diseased ovaries in cases where the clinical history was accurately known. Our experience is as yet insufficient to warrant us in asserting any positive conclusion.

It is, however, perfectly certain that there are two kinds of pathological appearances produced by chronic ovaritis, and these are probably the result of two wholly different morbid processes. It is in the cases where we have a cyst-production that we have the most adhesions formed, and I think, from what I have already seen, that it is very likely that these adhesions are produced by limited inflammations resulting from the rupture of these small cysts. This phenomenon was originally described by Dr. Mathews Duncan, and I have seen the results of it, I believe, in several instances, and, in one of my cases, I have twice been quite certain, from the completely altered condition of the ovary at separate examinations, that such ruptures must have taken place. I have so often seen these cysts rupture immediately the ovary was touched, that I can have no doubt of the accuracy of Dr. Duncan's description. I exhibited a specimen recently to the Pathological Society of a cyst of the Fallopian tube, which I had recognized as having repeatedly been the subject of rupture, each rupture being followed by an attack of acute peritonitis. The specimen was obtained on post-mortem examination, after the sudden death of the patient.

The physical examination of a case of this kind requires to be conducted with a great deal of care, for nothing disappoints a suffering woman more than to have her pain increased by rough handling. When, therefore, the practitioner hears a narration of such symptoms as I have described, let him be careful how, by his finger, or the sound, or the speculum, he injures a displaced and inflamed ovary or tube. It will, as I have already said, be

easily found behind, and about on a level with, the upper part of the cervix. A careless observer may mistake it for a retroflected fundus, and introduce a pessary for its replacement; but this will prove to be nearly always a source of disappointment; indeed, as I have already said, it may be a source of danger. Besides the symptoms of inflammation of the ovary in a chronic case, there are symptoms of uterine complication, and a very great many of the cases of intractable endometritis met with in practice are really but expressions of the same serious disease.

For the treatment of this disease the most important of all considerations is physiological rest. For this purpose the woman must regard herself as an absolute invalid during her menstrual week, remaining in bed the whole of that time. This condition at once separates the hospital from the private patient, and therefore we find that, while in hospital practice it is almost impossible to permanently cure a case of chronic ovaritis, yet, in many of our cases in private practice, a cure may be accomplished by patience and perseverance. Besides the menstrual rest, there should be complete cessation of marital intercourse. If it be found that the ovary is displaced and not adherent, it may be replaced by pessary or the genupectoral position, as already described (in the chapter on ovarian displacements). Over the groin counter-irritation should be employed by means of blisters of iodine or cantharides, my favorite formula being a mixture of equal parts of the tincture and liniment of iodine (B. P.), to be painted on over the groin every morning, as long as the skin will stand it. When it can no longer be borne, the skin is allowed to peel off and become again quite fresh, and after that the processes are to be repeated for some months. Of internal remedies, the only drugs which I have seen of the slightest service are bromide and chlorate of potash, and nux vomica. These I generally give in combination, or alternately, the patient taking from fifteen to twenty grains of the bromide or of the chlorate for a month, and then the nux vomica for a month.

In these cases I never give iron when there is any tendency to hemorrhage, or, indeed, in any other condition when that symptom is prominent. I have always found iron do harm then; and in support of my views upon this point, which have been very adversely criticised, I cannot do better than quote Dr. Alfred Meadows: "I do not think I at all exaggerate when I say that, in ninety-nine out of every hundred cases of menorrhagia which come before the practitioner for treatment, his first thought is, What form of astringent shall I give? And the answer probably in most cases will be, an astringent chalybeate—either the perchloride or the pernitrate; or some similar preparation of iron

will be almost certainly prescribed. No wonder that such routine practice frequently fails; for a very considerable number of cases of menorrhagia which come up for treatment are of the kind we have been considering, and for such as these the persalts of iron are worse than useless; their only effect will probably be to aggravate the complaint." The paper from which I quote Dr. Meadows' words is one on "Ovarian Menorrhagia."

Among our private patients, in spite of every kind of treatment, no matter how long a time it may be continued, we shall find a few cases in which no good result is obtained, and these can only be dealt with by the last resort of a surgical operation. Among our hospital patients, on the contrary, the cures are exceptional and the failures are the rule, solely for the reason that these poor women cannot fulfil the necessary conditions. This part of the treatment I shall discuss at length in the chapter on ovariotomy.

As one of the results of chronic ovaritis, we get pronounced hypertrophy of the glands, and this occurs distinctly in two forms, as it affects the follicles of the gland or its fibrous tissue. There may be, as Dr. Ritchie and Dr. Fox have pointed out, an increased formation of the number of follicles; this, in all probability, being a pathological feature of the ovarian hyperæmia I have described. Follicular hypertrophy may take the form of increase in size of individual follicles, and constitute, as first shown by Rokitansky, a variety of cystic growth; and this is, as both Dr. Duncan and myself have pointed out, a frequent character of the ovaries, which have to be removed on account of the suffering inflicted by chronic ovaritis.

In fact, there seems to be a close and hitherto unsuspected connection between cystic disease of the ovary and some of the most severe uterine symptoms that patients suffer from. Thus, I have removed the ovaries of a large number of women suffering from profuse and destructive hemorrhage, due to the presence of uterine myoma, and in the majority of these cases I have found the ovaries cystic. But it may be noticed that these cysts have not always been like the large tumors for which we perform ovariotomy, and the ovaries containing them have very often been no larger than walnuts. In them the ovarian tissue had been replaced by cysts, and when those cysts were emptied there was very little left besides their walls. On the other hand, some of the cystic ovaries in these cases of myoma had attained quite a large size, so that there has arisen a difficulty in deciding as to whether one was operating for the removal of cystic ovaries, or removing the ovaries for the purpose of arresting hemorrhage in cases of myoma. Indeed, the difficulty was to say

whether it was a case of ovariotomy or the so-called "oöphorectomy." The result has been, as I shall state at length in another chapter, that I have completely discarded the use of this latter term, because, unless some kind of conventional distinction is made, it will be perfectly impossible to classify our cases in any logical manner, or for any useful purpose.

These small cystic ovaries very often give rise to extremely severe hemorrhage, even when there is no myoma present, and when there is no suspicion of any chronic inflammation of the glands. The size of the ovaries is not great enough to justify us in calling them ovarian tumors, and it is highly probable they are nothing more than follicular hypertrophies. Of this peculiar condition I propose here to give in detail three instances.

In June, 1880, I was called by Dr. Collis, of Bridgenorth, to see with him, in consultation, a lady of very eminent social position, on account of persistent metrorrhagia. She was twenty-nine years of age. She had been married six years, and before that had suffered always more or less from a white discharge and irregular and profuse menstruation. Nine months after marriage she was confined of a still-born child, and nearly lost her life from hemorrhage. Two years after she had another child, living, and in the following year another child, both labors being characterized by unusual hemorrhage. In 1878 she had a miscarriage, and was alarmingly ill from hemorrhage. In August, 1879, a third child was born, about six weeks before the full time, when again the hemorrhage was extreme.

Dr. Collis has favored me with the following notes of the progress of this most interesting case: He saw her first on May 31, 1880, when he was informed that, up to a fortnight before his visit, she had missed three menstrual periods, but that during the fortnight there had been a continuous flow. Neither she nor her husband thought it possible that she was pregnant. They regarded it as her usual profuse and protracted menstruation; but on examination Dr. Collis found the uterus enlarged. He kept her in bed and gave her astringents, and afterward ergot and bromide of potash. Finally he had to plug the vagina, and then he telegraphed for me to see her with him. I saw her on the evening of June 13th, and found the patient very anæmic, and the uterus enlarged as if by a pregnancy of the third month. The cervix being closed, it was clear that we must dilate, and for that purpose I introduced my instruments, which act by continuous elastic pressure. In a few hours dilatation had proceeded so far that, after placing the patient under ether, I was able to empty the uterus of a large quantity of clot and some villous

cysts. These, I presume, were remains of a chorion of which the villi had undergone cystic dilatation, but nothing in the shape of membranous or placental structure could be discovered. Recognizing the urgent necessity of there being no more hemorrhage, I took great pains to remove everything from the uterus, and I scraped the whole of the inner surface over with a curette. She had no further loss, and made a good recovery till July 10th, when her period came on very profusely, lasted ten days, and left her very anæmic and exhausted. During the whole time she took large doses of bromide of potash and ergot, but with no apparent effect. Hemorrhage again occurred on July 29th, by which time she had been removed to Malvern, where she was under the care of Drs. Pike and Weir. The hemorrhage was extreme, and everything was tried, including hypodermic injections of ergotin, without any avail. I was sent for on August 3d, and found the patient in the very last stage of anæmic exhaustion. I removed a plug which had been placed in the vagina, found the uterus perfectly small and normal, explored it with the alligator-forceps, but found nothing in it, and then I applied solid nitrate of silver freely to the inside. This stopped the hemorrhage for about twenty hours, but after that it came on, and I was sent for again on the 6th. At my visit on the 3d I had informed the husband that, if the nitrate of silver did not check the hemorrhage, I knew nothing short of a surgical operation which would, but said nothing to him as to the nature of the operation I intended to perform. When telegraphed for on the 6th, I replied that I should bring my assistant and everything prepared to operate if it was thought desirable, and for this purpose my friend, Dr. J. W. Taylor, accompanied me to Malvern, in the absence of Mr. Raffles Harmar.

When I reached the house I met the husband, a man of distinguished position and great intelligence, at the door. He greeted me with the remark that he did not know what I proposed to do, that he left it entirely to me, but that he was perfectly sure the only thing which would give either temporary or permanent relief would be removal of the appendages. As this was exactly my own notion, and was readily agreed to by my colleagues in the case, I at once proceeded to carry it out, my only fear being that we had delayed it too long. She was blanched beyond my powers of language to describe, and she had those swollen, waxy lips which are rarely restored to their original condition. There was no difficulty in the operation, and both ovaries were found to be cystic, and about the size of Mandarin oranges. The uterus was perfectly normal in size and consistence when I had it between my fingers. The incision was only