A few cases of gigantic Ovarial Cyst

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Abstract

Generally, of all the visceras, the ovary is the commonest place for cyst-formation, and the majority of all the ovarial cysts are multilocular pseudomucinous forms. Lieppert states that it occupied 53.6% and by Stubler and Branders, 30.6% and by Pfannestiel, ca. 2/3 of all the ovarial cyst. In many cases, it is one sided (ca. 90%) and moreover is pedunculated, and as the epithelial proliferation of the tumor is almost unlimitedly repeated and so it is, indeed, possible to become a wonderful size. We have never seen any other tumor which can grow so large like the ovarial pseudomucinous tumor. Therefore, when I consider the reason that, even now, we sometimes meet with a gigantic ovarial cyst like these, considering from the side of patient, I can cite the following facts; first: the extreme terror of surgical operation, second: they have been left behind in the march of progress of civilization, and third: the poverty of their family, etc. In my cases, all the patients are either country people living far off from the civilized city, or those disliked the operation, and on the other side, the wrong diagnosis of the doctor and the midwife, which took it for pregnancy. These facts should be also considered in connection with it. Probably it may not be an error to attribute one of these reasons in Case 1. Such a monstrous tumor looks as if it occupies the whole abdominal cavity and it extremely presses the abdominal visceras and diaphragma. The Kaufmanns case mentioned previously shows that the height of its diaphragma is in the Ist intercostal space in the left side and the 4th rib at the right. Consequently the thoracic visceras are also pressed and causes some trouble in the heart and lungs. These disorders are, however, gradually recovered after removal of the cyst, as all of my cases have proved. The carrier of the head and extremities are rather the appendages of the tumor. Still the patient becomes very thin and her face characteristically shows the so-called “Facies ovarica” which is quite different from cachexy, but a similarity of feature is observed in those who are suffering from the said disease and it appears as if they are related each other. The development of the cyst is generally very slow but its monstrous one is rapidly enlarged at certain period. It appears at any age, old or young, mostly between 20 and 50, and especially Mainzer, Olshausen and the author have reported cases of very aged woman. The size of cyst varies from the very small to the marvellous monster one and it is not infrequently reported as mentioned before that the weight of cyst exceeds the body-weight. The gigantic cyst, of course, interrupts pregnancy, delivery and puerperium. The monstrous cyst consists of the so-called a large main chamber and many small accessory chambers and some are very tense in consistence. It, is mostly spherical in shape and all of my cases are like irregular gourd which is generally seen in literature. The surface of cyst is generally white-pearty, glittering appearance, but following the alteration of the content, of each chamber, its surface changes to yellow, black and yellowish-brown or dark red-color. The contents of the cysts are changeable; sometimes are very diluted serous or mucinous but generally thick mucous

*Copyright (C) OKAYAMA UNIVERSITY MEDICAL SCHOOL
frequently become very viscid. The monstrous cyst possesses various substances secondarily. As to the constitution of the contents, Scherer and Eichwald ever said that it consists of paralbumin and metalbumin but as a matter of fact there exists no albumin. Hammarsten named it pseudomucin, illustrating from his viewpoint; Pfannenstiel noted that it is not so simple substance and Mizukoff proved the existence of paramucin. Histologically the lumen of cyst is lined by a single layer of irregularly arranged cylindric epithelium having nuclei and glittering protoplasmas that lie at the bases of the cells and they quite resemble to the germinal epithelium of the intestine. Lahm reported that there are rarely seen the dark black colored spots on the inner surface of the cyst lumen and these are consisted of the cells which contained lipoidofuchsin-group-pigments. No particularity was noticed in my cases. There are also found various secondary changes in ca. 60% of all the cases. The torsion is said to occur in from 10 to 20% of cases, and sometimes it finally goes to the resection of the peduncle. The rupture of cyst-wall is not so infrequent and it results the seed-metastasis of the benign tumor of same kind. Metastasis after removal of the cyst is very rare but Olshausen and Baumgarten reported the benign metastasis in the parietal cicatrix and Schrader and Polano, the malignant metastasis. The perforation of cyst to the adjacent viscera is very infrequent Hemorrhage, infection, suppuration and calcareous infiltration are sometimes observed. Again, the complication of pregnancy also cannot be excepted and this is also seen as that of dermoid cyst but its occurrence is ca. 2%. Pfannenstiel marked that pseudomucinous cyst is frequently combined with the dermoid cyst. It is, however, infrequent (4-5%) from the standpoint of my experience and I can not agree with the view that the cyst-formation of dermoid cyst is proliferated from the pseudomucinous cyst. The most frequent occurrence in the secondary changes is the adhesion to the adjacent viscera. But it is not serious and even if it is in an advanced stage can be removed easily. Of all the changes, the malignant degeneration is the most troublesome (according to Stubler and Branders it is 6.7%) and its etiology is still unknown. It is said that in long existence of the cyst in advanced aged woman, the malignant degeneration appears but in my case 3 in aged woman, though I devoted myself to its observation up to her death. I could not find any symptom of malignant degeneration, and the author had experienced in an aged woman of 86 years old whose ovarial cyst gradually grew in two or three years after it was found, and it attained to the size an adults head but he was unable to find the symptoms of malignant degeneration either. On the contrary, I even had an experience of miserable case of a woman of 23 years old in pseudomucinous ovarial cyst, who in only a year’s progress after the cyst was found, it clearly happened to be carcinomatous degeneration and came to a sad end of exploratory laparotomy. How does this malignant degeneration occur? As to its causes, I have contributed nothing but explain with many vague words which now require further investigation. I think that it can not be put in one class at all and I attribute this to an individuality of the cyst-carrier. It may be convenient to settle the question, if I explain it, as a cause of carcinoma also. Such a malignant degeneration, in this case, is very infrequent and it would certainly be an object of research in future. Finally, the author expresses his respectful thanks to Dr. Ando, Professor of the Okayama Medical University for his revisal.
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A few cases of gigantic Ovarial Cyst.*

By

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Introduction and literature.

Among the gynecological tumors, the ovarian cyst as well as the uterus myoma is most frequently observed. But its gigantic form which is the so-called cystoma giganteum is very rare nowadays. This may be due to the remarkable progress of its operative treatment and the advancement in civilization. Thus, the so-called cystoma giganteum is reduced, year after year, in its number so that it is nearly wiped out.

A few years after I went to the practise medicine, I have by chance happened to observe three cases of cystoma giganteum which were all cured by the operation so that it will be described here for reference.

Prior to the description of the cases, some literature on this subject will be quoted. The tumor weighed under thirty kg is not considered here. Anufriew, Zavet, Frenz, and Binkley reported the tumors weighed 33, 46.4, 50.4 and 103 kg respectively. On autopsy of a very thin female body aged 59 (body-weight; 163 pounds) who died of the intestinal stenosis, Kaufmann found an ovarian cyst weighed 93 pounds and its volume was 46 litres. It may be noted here that such a tumor weighed over 50 kg is quite rare. The 80 kg tumor (content: 80 litres) extirpated from a woman weighed 117 kg, was reported by Martin. The biggest one among the so-called “Mammuth tumor” collected by Bullitt weighed 110 kg. Zacharias found a cystoma giganteum which weighed 132 kg and it is the biggest on the record.

Since the physique of Japanese is very much smaller than that of the Europeans, there have not been reported so many gigantic forms of ovarian cyst as above mentioned in our country. But many cases of so-called macro-ovarial cystoma have been hitherto noted at various Gynecological Department or Hospital of Osaka, Okayama, Hikone, Tōhoku, and others.

*This paper was read at the twenty first meeting of the Nippon Gynecological Association in 1923 by the author.
Experiment:

Case 1. Examined at Tomioka-Hospital, Saga City.
The first medical examination: January, 1923.
Multipara (3 times).
Anamnesis:— Menstruation was irregular since May last year
(sometimes twice a month, or sometimes noticed a little hemorrhage
irregularly). The delivery and duration of puerperium were normal.
The last delivery was at her 23 years of age. At the age of 5, her
parents died; has 3 brothers. At her 25th year, suffered from eye-
disease which caused the weakness of her eye-sight and made her
hearing difficult.

The abdominal tumor was noticed first in February 1920, and then
it was about the size of a child head without pain and fever. The local
physician and mid-wife diagnosed it as pregnancy of 6th month. The
patient was earnestly desiring a child so that this diagnosis very much
pleased her and her family who held the ceremony of wearing a matern-
ity belt for her: (this is the Japanese custom and a belt is worn at
the 5th month of pregnancy). In due time, the "Terminus" of preg-
nancy approached, but no symptom of labor appeared. In spite of such
condition, this uneducated woman still believed of pregnancy and no
special attention was paid. Her abdomen enlarged more and more. At
the end of 1923, the maximum circumference of her abdomen measured
106 cm, and just one year later it reached to 122 cm which caused to
lose control of her body and hard in walking. Since the last August
she had no bathing and mostly had to stay in bed, keeping in lateral
position and nearly impossible to lay in dorsal position. The lower
extremities, especially its right side were remarkably edematous, and by
several doctors it was declared to be inoperable so that she was given
no hope to live.

Status praesens:— A moderately constituted woman but is very
thin and anemic (body-length: 155.0 cm, body-weight: 66.3 kg). Her
face expresses so-called "facies ovarica". The abdomen enormously and
spherically expanded with dulness on percussion (see figure 1, A).
The epigastric area is especially enlarged and strongly painful on
pressure. Its surface is generally smooth and elastically expanded and
enlarged vein can be seen on its surface. The nabel is enlarged about
size of a penny.

The circumference of the abdomen (at the nabel), 125.0 cm
The circumference of the thorax, 83.6 "
Distances from the nabel to;
the xiphoïd appendix: 38.0 (arc-length) "
33.0 (diameter) "

http://escholarship.lib.okayama-u.ac.jp/amo/vol2/iss1/9
The bimanual examination was scarcely done. The portio vaginalis uteri is short and centrally situated. The secretion is slight but bloody.

The frontal lower border of right lung lies on the 5th rib and that of the rear of left lung lies on the 8th vertebrae thoracis. In both frontal and rear of right lung there can be heard many rale but slightly in lower border of left lung.

The apex impulse of the heart is slightly left sided in the 5th intercostal space. The first sound at the heart-apex is a little unclear and the aortic second sound is accentuated. The heart is slightly enlarged bilaterally.
T. Tomioka:

Pulse: on her dorsal position, 90
on her lateral position, 80
Blood pressure: 120–78 mm Hg.

She was admitted to hospital, being diagnosed as macro-cystom by
the above symptoms.

After admission, by minute examination it was noticed an occasional
slight fever, diarrhea and night sweat so that I had a suspicion of tuber-
culosis. Prior to the operation, by puncture of the abdomen, ca. 12,000 cc
(its weight 10,600 g) of light brown black coloured pseudomucinot's
cyst-contents was aspirated. This treatment was, however, postponed for
an hour as the patient complained of fatigue.

Narcotica: 1 cc of narcocon-scopolamine was subcutaneously injected
and followed with 0.05 g tropacocain for lumbar-anaesthesia. The tech-
nical steps of the operation were as follows:—

On the abdominal wall, a longitudinal median incision was made 4 cm
up from the symphysis to 2 cm up from the umbilicus. The sub-
cutaneous fatty tissue was very poorly developed and the muscular tissue
was also very thin. Further up the peritoneum was thickened more
and soon reached to the cyst, which was a small, light brown coloured
ascites. Opening this peritoneum, it was found that the wall of the cyst
was smooth on its lower part but its upper part was strongly adhered,
especially to the parietal peritoneum, omentum and intestinal canalis.
The adhesions between the cyst and peritoneum were impossible to
remove digitally without forceps, but those of the intestinal canalis in
several parts could be slowly removed by fingers. Thus, first of all, on
the main chamber of the tumor an incision was made, and the similar
contents previously obtained by aspiration, flew out in large quantity
8,500 cc (weighed ca. 8,050 g). After reducing the size of the tumor, it
was pulled out from the abdominal cavity and it was confirmed that
the tumor had been developed from the left ovary. A small, lower part
of the tumor seemed to be developed in the broad ligament, made this
operation very difficult. The adnexa uteri of the right side were nearly
normal but the ovary was just slightly small. The corpus uteri was
situated centrally and its consistence was normal but slightly small.
The abdomen was closed by the usual method.

Time of operation: 1 hour and 30 minutes. The ante-operative body-
temperature and pulse were 36.6°C and 70, and those of the post-
operation were 36.5°C and 60 respectively.

Post-operative progress: The pulse showed an occasional inter-
mittence and the fever 38.0°C at the highest but gradually it became
normal and the wound healed up by the first intention. The thorax and
its viscera gradually returned to their normal position and the general
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condition progressed well and the patient was able to walk by her own will. After about one month, the patient regained her health and thanked me for she escaped the death (See figure 1, B).

Fig. 1, B. Case 1. 35 days after operation
(Her appearance changed wonderfully!).

The gross-findings of the tumor: It showed an irregular gourd-like form and its consistence was specially tough in the accessory chamber. The size of cyst was several times larger than a new-born. Many adhesions on the surface of the cyst were observed and its smooth areas brilliantly whitened. The blood-vessels of the tumor were well developed on its wall. The weight of the extirpated tumor itself was 5,700 g. The wall of the cyst was relatively thick. The length of the tuba uterina Falloppii (oviduct) connected to the cyst was 22.0 cm.

No malignant-degeneration was found microscopically in the tumor and this was one of the ordinaly pseudo-mucinous cyst.

Summary of Case 1.
The case was a gigantic pseudomucinous multilobular cyst, which has developed from the left ovary of 37 years old multipara (3 times). The patient who had the tumor of the baby-head size in the hypo-
gastrium was diagnosed wrongly as pregnancy by a local physician and a midwife 3 years ago. But later this matter of joy had been changed to a great surprise by the proper diagnosis. She however left it alone, so that in one year-duration, the abdomen was enlarged remarkably which caused to loose control of her body and hard to walk. Still, she had no bathing for a half year, mostly staying in bed and was given no hope to live. She came to my office to be examined, trusting to chance, and her principal complaints were extreme swelling of the abdomen, edema of the lower extremities and slight hemorrhage from uterus. Description of the patient was as follow: body-length: 155.0 cm; body-weight: 66.3 kg; her abdominal circumference: 125.0 cm. The abdominal tumor itself looked as if her main body and her real head and extremities for its appendages. Her face showed so-called "facies ovarica" at a glance.

The operation was relatively hard owing to her weakness and adhesions of the cyst but was performed safely. The weight of the cyst excluded, its contents was estimated 5,700.0 g and the total liquid-weight of the contents aspirated one week before the operation and those of an operation was 20,600.0 cc. The weight of the tumor did not exceed her body-weight as that of Mayer's case which was recently reported but the tumor was several times larger than that of a new-born and showed an irregular gourd-like form. No malignant degeneration could be found in this cyst.

Case 2. Examined at Kumagai-Hospital, Okayama City, in October, 1920. Patient's name, K. U.; Age, 41; Farmer's wife. Multipara of 8 confinements.

Anamnness:— Menstruation was nearly normal. Her last confinement was in December, at her 39 years of age and was lying in bed for about one month. She had been healthy since her younger age but in October, 1918 was diagnosed as polyhydramnion by a doctor and complained of fatigue during her pregnancy. She delivered a child very easily but her abdomen was not reduced in its size even after her delivery. It was not so enlarged until last August but gradually increased in its size. Especially in May, this year it was enlarged remarkably and caused pain by compression. But she left it alone till then, being afraid of the operation which may kill her.

No fever. The abdomen was expanded and she suffered pain in her loin. It was hard to walk and so she used to live by a sedentary occupation. Her appetite was normal but both the evacuation of bowels and urination were very difficult and felt pain.

Status praesens:— The body was small and its length measured
145.0 cm. She was anemic and thin, and her face showed, so-called "Facies ovarica". Body-weight: 51.85 kg. The whole abdomen was extremely enlarged (see figure 2, A) and especially the hypogastrium hang down strongly. A little high up the umbilicus there was a transverse sulcus which seemed to divide the tumor. The consistence of the tumor was like a cyst but that of the left side of the abdomen was cartilaginous. Two fingers were scarcely inserted between the xiphoid process and the tumor, but it was impossible to do so between the tumor and hypochondrium. The enlarged blood-vessels were seen on the surface of the abdomen. Abdominal circumference was 114.0 cm. The length and width of the tumor were 60.0 cm by 55.0 cm.

By vaginal-examination, no pecuriarity was found. The portio vaginalis uteri was slightly cyanosis in color. The bimanual-examination was hard and the corpus uteri seemed to be turned ford, and still the size of the uterus was obscure.

The cardiac beat was extended 1½ finger-width to the left of the nipple in the 4th intercostal space. The apex of left lung was short and
breathing throughout the left lung was rough and showed slight dulness by percussion. The right thorax showed dulness under its 5th rib but otherwise nothing abnormal. Pulse: 119 – 117.

Operation-technic:— Under lumbar anesthesia (tropacocain 0.05) with an injection of pantopon-scopolamine (0.5 cc) after 4 minutes ca. 9 cm longitudinal incision was made between symphysis and umbilicus. The abdominal wall was thin and the peritoneum, slightly thickened. Just under the peritoneum a tumor with smooth surface was seen and at the same time light brown transparent ascites existed. From main chamber incised, dark brown colored, chocolate like thick mucoid substance slowly ran out which estimated over 14,900.0 g. Adhesion to the omentum, peritoneum and intestines was relatively slight. The cyst itself was originated in the ovary and its pedicle was pretty broad and long. No torsion was seen. The corpus uteri was enlarged to a small goose-egg size and slightly tender, and anteverted. In the right adnexa uteri, there was nothing abnormal except the so-called "small cyst-degeneration" in the ovary. The abdomen was closed by routine sutures. Time of operation was 30 minutes; hemorrhage during the operation was slight; body-temperature before operation 37.1°C and pulse, 120; body-temperature after operation: 37.0°C and pulse, 94. After the operation, the apex impulse of the heart was seen in the left lower part of the left nipple.

Progress after operation:— Recuperated very smoothly and the patient had discharged from hospital with satisfaction after 20 days.

Gross-findings of the cyst (see figure 2, B):— The surface of the cyst was generally smooth, shiny, and whitened. On its surface, several large and small cysts were protruded and some were colored in yellowish red or reddish-brown. Still, a part of the surface was covered with enlarged blood-vessels. The left tuba was nearly normal, but its 10.0 cm long adheres to the tumor. The cyst was separated in its centre with a transverse sulcus as it was seen on the abdomen. In an accessory chamber of the cyst a hard nodule in a thumbtip size was seen. The cyst-wall was not thin.

Microscopically no pecuriosity was found.

The following day, the cyst was filled with water on trial (this, of course, remarkably reduced its size than the original) but it was still several times larger than a fertilized new-born (See figure 2, B).

Summary of case 2.
This was a gigantic pseudomucinous multilocular cyst of the left side, obtained from the 41 years old multipara of her 8th confinement. This cyst was so enlarged in 5 to 6 months that hard to walk when she was brought in and she obliged to prefer to a sedentary occupation. Frans reported a monstrous cyst which is as large as it pedunculates to the
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Fig. 2, B. Case 2. Comparison of the extirpated tumor with fully developed fetus (the size of the cyst is remarkably reduced than that of the original one, as the content of the cyst was substituted with water, a day after operation).

patient’s knee. My case can not be equal to that but is a similar one. The main symptoms were remarkable swelling and pressure on the abdomen.

Body-weight was 51.85 kg; body-length, 145.0 cm; abdominal circumference, 114.0 cm. The content of the cyst on operation was estimated over 14900.0 cc.

No malignant degeneration was microscopically detected in the cyst. The patient’s face showed the so-called “facies ovarica” and she beard a striking resemblance as if they are relatives each other to Case 1 who was, of course, quite different person. By the laparotomy, she was well saved.

Case 3. Examined at Tomioka-Hospital, Saga City.
First examination: April, 1920. Patient’s name: T.F. Age 75. No occupation
Multipara (8 times)

Anamnesis:— Her husband is living in excellent health. Menstruation has ceased at her 46th year. Parturition and puerperium were always smoothly passed and all the children were also well grown. Five of them are at present in good health. The patient at her 70th year was diagnosed at some hospital as an ovarian cyst of the child-head size, but she did not wish to be operated on owing to her advanced age.
Thence, the abdominal tumor gradually enlarged, and recently its development was specially remarkable, so that she had to stay in bed all the time, having been restricted in her body-movement. The patient desired to have the abdominal fluid expelled only because of pain and fearing the operation, begged to be removed the tumor postmortally. Her appetite was not poor nor constipated.

Status praesens:— Her constitution was small and the abdomen was markedly expanded which was generally smooth and elastically tender. No special hard mass was felt on the abdomen, and it was dull on percussion. The upper border of the abdominal tumor extended to the xiphoid process. The patient showed agony at sitting position. The abdominal circumference round umbilicus was 122.0 cm. The cardiac impulse was seen at left upper area from nipple in 4th intercostal space. Pulsation was 54; body-temperature, 36.7°C. The face was more or less edematous. Both the patient and her family desired to relieve her pain temporarily, having considered her advanced age and did not agree on the operation.

Progress:— 1st-aspiration, in April. Viscid light yellowish fluid of the cyst-contents was aspirated ca. 5,500.0 cc. By this treatment the pressure on her abdomen was removed and soon after that the patient went to sleep soundly.

2nd-aspiration, in July. The abdomen was enormously expanded and after a few days she was in bed quite motionlessly with hypogastrical ache. Had constipation for nearly a week and complained of insomnia. The fluid was expelled which was colored light black, stronger than that of the previous aspiration and it was estimated ca. 8,400.0 cc.

3rd-aspiration, in October. Complained of constipation and hypogastrical ache. Ca. 6,000.0 cc of fluid was expelled.

4th-aspiration, in February, 1921. The whole abdomen was strongly expanded. The fluid then expelled was 10,200.0 cc. After the aspiration, ordered her immediately to stay in bed as she suffered from slight dyspnoea.

5th-aspiration, in June. The abdomen was strongly expanded. A sign of malignant degeneration was not noticed in the tumor. Fluid expelled was measured ca. 12,500.0 cc. The patient complained of dyspnoea at the end of aspiration but soon recovered by laying her down.

6th-aspiration, in November. Recently complained of abdominal ache and cardiac excitement. Expelled the fluid, 9,800.0 cc. The cyst-contents became more and more viscid and its color was chocolate-like, however, no induration in the tumor nor remarkable ascites was observed. Still, the sign of malignant degeneration did not appear. After the aspiration she coughed but had no dyspnoea. Immediately
ordered her to go to bed.
7th-aspiration, in March, 1922. The grade of the abdominal-enlargment was no so remarkable as that of the previous time, and the color of the cyst-content was dark. The fluid expelled: 4,000.0 cc.
8th-aspiration, in July. The abdomen was markedly expanded and noticed a marked edema on her whole body. The fluid aspirated was not so viscid and its color was light brown as that of the 1st-aspiration. Ca. 8,500.0 cc of the fluid was aspirated.

Thus the aspiration was repeated but the patient gradually became weak owing to the kidney-trouble and finally died at the end of July.

Summary of Case 3:
This case was a gigantic pseudomucinous ovarian-cyst found in an aged woman after having had 8 children. The patient had known the existence of a tumor in her hypogastrium, but she let it take its own course, chiefly because of the terror of surgical operation. Finally, it grew to be a huge one, so that she could scarcely move and she had always been confined to bed. The abdominal circumference was 122.0 cm. On account of the pain, the patient wished to have the cyst-contents

Fig. 3. An additional case. Age 34.
(Another suspected case of gigantic tumors.)
removed. She feared and refused laparotomy but entreated its extirpation postmortally. For about 2 years and 4 months, aspiration was repeated 8 times and the liquid expelled amounted to ca. 65 litres totally. Malignant degeneration was not proved in the cyst. (N.B. It is a great regret that the picture can not be shown here, because it was lost through carelessness).

As an additional case, I add here a case of macro-ovarial tumor (see figure 3). The patient aged 34 was a woman, twice experienced in pregnancy and the hypogastrial tumor grew as big as shown in the figure, after about 3 years, since the discovery of the cyst. This was a right sided pseudomucinous multilocular cyst and could be extirpated by laparotomy and the patient was very much pleased for her recovery.

**Summary:**

Generally, of all the viscera, the ovary is the commonest place for cyst-formation, and the majority of all the ovarian cysts are multilocular pseudomucinous forms. Lieppert states that it occupied 53.6% and by Stäbler and Branders, 30.6% and by Pfannestiel, ca. 2/3 of all the ovarian cyst. In many cases, it is one sided (ca. 90%) and moreover is pedunculated, and as the epithelial proliferation of the tumor is almost unlimitedly repeated and so it is, indeed, possible to become a wonderful size. We have never seen any other tumor which can grow so large like the ovarian pseudomucinous tumor. Therefore, when I consider the reason that, even now, we sometimes meet with a gigantic ovarian cyst like these, considering from the side of patient, I can cite the following facts; first: the extreme terror of surgical operation, second: they have been left behind in the march of progress of civilization, and third: the poverty of their family, etc. In my cases, all the patients are either country people living far off from the civilized city, or those disliked the operation, and on the other side, the wrong diagnosis of the doctor and the midwife, which took it for pregnancy. These facts should be also considered in connection with it. Probably it may not be an error to attribute one of these reasons in Case 1. Such a monstrous tumor looks as if it occupies the whole abdominal cavity and it extremely presses the abdominal viscera and diaphragma.

The Kaufmanns case mentioned previously shows that the height of its diaphragma is in the 1st intercostal space in the left side and the 4th rib at the right. Consequently the thoracic viscera are also pressed and causes some trouble in the heart and lungs. These disorders are, however, gradually recovered after removal of the cyst, as all of my cases have proved. The carrier of the head and extremities are rather
the appendages of the tumor. Still the patient becomes very thin and her face characteristically shows the so-called "Facies ovarica" which is quite different from cachexy, but a similarity of feature is observed in those who are suffering from the said disease and it appears as if they are related each other. The development of the cyst is generally very slow but its monstrous one is rapidly enlarged at certain period. It appears at any age, old or young, mostly between 20 and 50, and especially Mainzer, Ols Hansen and the author have reported cases of very aged woman. The size of cyst varies from the very small to the marvellous monster one and it is not infrequently reported as mentioned before that the weight of cyst exceeds the body-weight. The gigantic cyst, of course, interrupts pregnancy, delivery and puerperium. The monstrous cyst consists of the so-called a large main chamber and many small accessory chambers and some are very tense in consistence. It is mostly spherical in shape and all of my cases are like irregular gourd which is generally seen in literature. The surface of cyst is generally white-pearty, glittering appearance, but following the alteration of the content, of each chamber, its surface changes to yellow, black and yellowish-brown or dark red-color. The contents of the cysts are changeable; sometimes are very diluted serous or mucinous but generally thick mucous and frequently become very viscid. The monstrous cyst possesses various substances secondarily.

As to the constitution of the contents, Scherer and Eichwald ever said that it consists of paralbumin and metalbumin but as a matter of fact there exists no albumin. Hammarsten named it pseudomucin, illustrating from his view point; Pfannenstiel noted that it is not so simple substance and Mitsukoff proved the existence of paramucin. Histologically the lumen of cyst is lined by a single layer of irregularly arranged cylindric epithelium having nuclei and glittering protoplasmas that lie at the bases of the cells and they quite resemble to the germinal epithelium of the intestine. Lahm reported that there are rarely seen the dark black colored spots on the inner surface of the cyst lumen and these are consisted of the cells which contained lipoidofuchsin-group-pigments. No particularity was noticed in my cases. There are also found various secondary changes in ca. 60% of all the cases. The torsion is said to occur in from 10 to 20% of cases, and sometimes it finally goes to the resection of the peduncle. The rupture of cyst-wall is not so infrequent and it results the seed-metastasis of the benign tumor of same kind. Metastasis after removal of the cyst is very rare but Ols Hansen and Baumgarten reported the benign metastasis in the parietal cicatrix and Schräder and Polano, the malignant meta-
stasis.

The perforation of cyst to the adjacent viscera is very infrequent.
Hemorrhage, infection, suppuration and calcareous infiltration are sometimes observed. Again, the complication of pregnancy also cannot be excepted and this is also seen as that of dermoid cyst but its occurrence is ca. 2%. Pfannenstiel marked that pseudomucinous cyst is frequently combined with the dermoid cyst. It is, however, infrequent (4-5%) from the stand point of my experience and I can not agree with the view that the cyst-formation of dermoid cyst is proliferated from the pseudomucinous cyst. The most frequent occurrence in the secondary changes is the adhesion to the adjacent visceras. But it is not serious and even if it is in an advanced stage can be removed easily.

Of all the changes, the malignant degeneration is the most troublesome (according to Stäbler and Branders it is 6.7%) and its etiology is still unknown. It is said that in long existence of the cyst in advanced aged woman, the malignant degeneration appears but in my case 3 in aged woman, though I devoted myself to its observation up to her death, I could not find any symptom of malignant degeneration, and the author had experienced in an aged woman of 86 years old whose ovarian cyst gradually grew in two or three years after it was found, and it attained to the size an adult's head but he was unable to find the symptoms of malignant degeneration either. On the contrary, I even had an experience of miserable case of a woman of 23 years old in pseudomucinous ovarian cyst, who in only a year's progress after the cyst was found, it clearly happened to be carcinomatous degeneration and came to a sad end of exploratory laparotomy. How does this malignant degeneration occur? As to its causes, I have contributed nothing but explain with many vague words which now require further investigation. I think that it can not be put in one class at all and I attribute this to an individuality of the cyst-carrier. It may be convenient to settle the question, if I explain it, as a cause of carcinoma also. Such a malignant degeneration, in this case, is very infrequent and it would certainly be an object of research in future.

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