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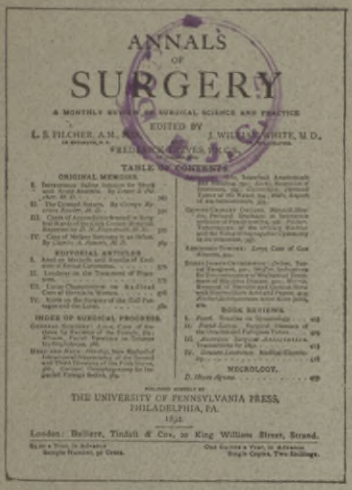
ANNALS
OF
SURGERY

A MONTHLY REVIEW OF SURGICAL SCIENCE AND PRACTICE

EDITED BY

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JULY, 1892.

# Hydrocele in the Female.

By Wm. B. Coley, M. D.,
New York.

# HYDROCELE IN THE FEMALE.[1]

[WITH A REPORT OF FOURTEEN CASES.]

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THIS affection, on account of the small number of cases reported, as well as the brief and imperfect description it has received, at the hands of the surgical writers of the present period has come to be regarded either of doubtful existence or too rare an anomaly to deserve consideration. The daily examination of a large number of cases of hernia or of supposed hernia at the Hospital for Ruptured and Crippled has led me to believe that this affection is much more common than is generally supposed. While very little has been written upon this subject by American surgeons, the most extended article appeared in the American Journal of Obstetrics in 1881, from the pen of Dr. W. C. Wile (1). Although the two cases therein reported are exceedingly interesting, the attempt to prove them almost unique is not successful and I may be pardoned for calling attention to certain errors which are responsible for the mistaken impression caused by the paper. Dr. Wile stated "in all the ancient works at my command to consult I have not seen a single mention of it," and he further adds quoting from Dr. Bigelow, of Washington, who had consulted the library of the surgeon general, on the subject, "I have been through all the old Latin, French and German Literature from the Fourteenth Century to the present time and there is *absolutely nothing*.

[1]Read before the Surgical Section of the New York Academy of Medicine, May 9, 1892.

Paré, page 233, edit. 1599, mentions it as a variety of tumor, but does not allude to it especially in the female. Scarpa, 1584, speaks of it merely in connection with scrotal hernia. I went through everything and can only find the following," and he goes on to cite a German and an Italian periodical of 1879 and 1880. Without questioning in any way the sincerity of these statements a failure to point out the errors which more careful research has brought to light would be a failure to ascribe to the surgeons of the past the credit that justly belongs to them.

This affection was not only recognized in very early times, but actual cases were carefully reported, and in not a few cases the diagnosis was confirmed by operation.

Three cases were reported previous to 1800, viz.: by (2) Ætius, 543 A. D., Plater (4) 1536 A. D., Bertrondi (3) (1723). Scarpa (6) 1747–1832 gave a good description of it in the eighteenth century in his memoir upon the Tumors of the Spermatic Cord, and referred to it as "Hydrocele of the Canal of Nuck." (7) Desault, 1737–1762 in the *Journal d' Chirurg.*, Tom. I, 251, describes a case in detail, in which the diagnosis was made certain by operation and the sac excised.

Lallement (8), Surgeon-in-Chief to the Hospital of Salpetrière, reported a case in 1795.

Coming down to 1832 we find an exhaustive monograph by an Italian surgeon, George Regnoli (9), Professor of Surgery at the University of Pisa. This paper received so much attention that a review and abstract of it, 27 pages in length, appeared in the *Archives Generales*, Tom. V. Ser. II. 114. Regnoli not only described a very interesting case, treated at his own clinic with two others observed by Palletta, but he gives by far the most complete as well as the most accurate description of the anatomy and pathology of this affection that has ever been written. With all that has since been learned scarcely a single addition or correction could be made to the clear and admirable picture drawn by him in 1832. Few cases were reported by English surgeons previous to 1850, but during the decade 1850–1860, of ten cases reported, five were by English observers.

The first American case that I have seen reported is Bennett's, (10) of Danbury, Conn., published in the *New York Med. Record*, Nov. 15, 1870.

That the affection had been seldom recognized by American surgeons and gynæcologists is clearly shown by Dr. Wile's paper, which contains in brief the answers to 50 letters of inquiry sent to the most prominent surgeons and physicians in the country. Not more than three or four of the whole number had ever seen a case.

In 1884 Prof. Hennig, (11) of Leipsig, made a thorough investigation of the subject. He reported two cases observed by himself and found 37 others in literature.

In 1890 Wechselmann, (12) of Berlin, published a very exhaustive paper, and to his careful and laborious research we are largely indebted for our more recent knowledge. He had observed two cases in a single year in Madelungs Klinik, and his entire collection contains 62 cases.

In thus briefly summarizing the literature on the subject I have endeavored to show that this affection was not only recognized by surgeons three centuries ago as theoretically possible, but that practical illustrations were recorded, and further that more recent and a constantly increasing number of cases has proved the correctness of the early observers.

Since September, 1890, I have seen at the Hospital for Ruptured and Crippled, 14 cases of hydrocele in the female, which added to one previously observed at the New York Hospital, makes 15.

The diagnosis was not only confirmed by two or more surgeons, but rendered certain by aspiration or operation.

Before analyzing these cases or describing them in detail I shall say a few words in regard to the anatomy and pathology of the disease.

"Hydrocele muliebris," "cyst of the round ligament," "hydrocele of the canal of Nuck," are terms applied, indiscriminately, to this affection, by most writers. The broad classification of Regnoli, which includes all cysts in the inguinal region (in the female), connected more or less intimately with the round ligaments, under the general term "hydrocele muliebris," seems to me the most rational and the best. This classification has never been accepted by the French writers, and hydrocele muliebris has been understood by them only in its most limited sense, viz.: a serous collection in a true processus

vaginalis peritonæi, or diverticulum of Nuck. The existence of such a diverticulum they strenuously denied, and, consequently, could not admit the possibility of a hydrocele of such a diverticulum.

The arguments against the existence of a diverticulum of Nuck brought out in the Theses of Duplay (13) and Robère (14) were based chiefly upon the examination of twenty-one female embryos during the fourth and fifth month of life.

The later and more thorough investigations of the German pathologists have placed the existence of a true diverticulum of Nuck beyond all question, and a recently reported case by Richelot (15), together with one operated upon by myself, have made the existence of a hydrocele of such a diverticulum an equal certainty.

Niemann (16) found this process of peritonæum present 28 times in 46 cases.

Bergmann (17 )examined 158 inguinal canals in the female from birth up to the age of three years. In these cases he found the canal of Nuck open as far as the external ring, once on the right side, three times on the left, and once on both sides. In addition he found 12 cases in which there was only partial obliteration ; 9 on the right, 2 on the left and one on both sides.

Sachs, (18) in 150 cases examined during the first year of life found the diverticulum of Nuck pervious entirely or partially 37 times.

Zuckerkandl (19) in one hundred children found the canal. open 20 times, 3 on both sides, 12 on the right and 5 on the left.

Féré (20) in 100 observations found the canal open 13 times.

Engel (21) in 100 observations found the canal open 31 times.

To turn now to the clinical and more practical aspect of the subject. Of the 62 cases in Wechselmann's collection there were only two that could be properly termed Hydrocele of the Canal of Nuck in the narrow sense as used by the French and even these two were not absolutely demonstrable.

To prove the point beyond question one case would be sufficient, but such a case must not only be a cystic tumor in the inguinal region, but its interior must be shown to have a communication with the abdominal cavity.

This cannot be proven by showing the tumor to be cystic by aspiration and reducible by pressure, a small portion of omentum might easily be present with the fluid and not recognized. The additional evidence necessary can only be gained by an operation, the finding of a sac lined with peritonæum, having an unobliterated connection with the abdominal cavity, and yet of such conformation as to exclude the possibility or probability of a true hernial sac. Only two cases that I have found fulfill these rigid requirements.

The first was published by Richelot, in 1890, in *L' Union Medical,* and the other was operated upon by myself in December, 1891, at the Post-Graduate Hospital.

Richelot's case was a girl 19 years of age. A small swelling had existed in the inguinal region for four years. No exciting cause was known; the swelling could be forced back by gentle pressure and disappeared on lying down. There was no impulse on coughing, and she had never had any symptoms of hernia. The diagnosis was made by the history and character of the swelling and was confirmed by aspiration. A radical operation was advised on the ground that it caused considerable mental anxiety, was a barrier to marriage, which the patient was entertaining and further, that its presence greatly predisposed to a hernia.

An incision was made as for a hernia, a small sac was found filling the inguinal canal and extending some distance beyond the external ring. The sac contained clear serum and communicated with the abdomen by means of a minute opening. The sac was ligated high up, the lower portion dissected out and the wound closed. The patient was up and about in ten days. This case was widely reported in France and Tilleaux (22), the well-known anatomist referred to it at length at a meeting of the Academy in September, 1890.

My own case is almost exactly similar to Richelot's, except that it occurred in an older woman and had a supposed exciting cause. Although it did not disappear on lying down or under moderate pressure it did communicate with the abdomen by an even smaller opening. The following is a brief history of the case:

The patient was a widow, 47 years of age. She had never had children; menses were irregular, but she had not reached the menopause.

About four years ago, while alighting from an elevated train, her left leg was severely wrenched. Acute pain and tenderness in the right inguinal region immediately ensued, accompanied by diarrhœa and profuse menorrhagia. A few days afterward a small, slightly tender swelling appeared in the above-mentioned region. The swelling never disappeared, and two years later she was examined by a physician of this city who pronounced the trouble hernia, and advised a truss. The truss was not worn, and the swelling remained about the same with slight increase in size. There were no symptoms other than a feeling of discomfort.

In October, 1891, she again sought advice at one of the hospitals, and for three weeks she was treated for an irreducible omental hernia, by means of a spica bandage and pad. I first saw her Nov. 9, 1891. A careful examination showed a tumor the size of an English walnut in the left inguinal region. The tumor was irreducible, and had the peculiar elastic feel suggestive of a cyst. I thought it probably was a hydrocele of the canal of Nuck, and aspiration with a small hypodermic needle, showing clear straw-colored serum confirmed the diagnosis. The fluid exactly resembled the ordinary hydrocele fluid in the male, and contained about the same percentage of albumen.

About two weeks later the swelling was again aspirated and about one drachm of similar fluid removed. The patient being of a very nervous temperament, and the presence of the cyst increasing the liability to hernia, an operation was advised and consented to.

On December 15, 1891. I made a 2½ inch incision, as for an inguinal hernia; a thin walled cyst the size of an almond, was found emerging from the external ring. The walls were partially collapsed, owing to the recent aspirations and probably also to the frequent manipulation forcing some of the fluid back into the abdomen. On opening the cyst clear fluid escaped, showing a cavity lined with peritonæum and communicating with the abdominal cavity by means of a very small opening just admitting a probe.

The sac was easily freed, drawn down, ligated high up, and removed.

The wound was closed without drainage. The patient left the hospital at the end of ten days.

CASE II.—In March, 1892, I operated upon a second case. Without going into detail the main facts were as follows: A woman 29 years of age, married (1 year), without children and never having been pregnant, had noticed a small swelling in the left groin one month before. It caused much anxiety and she stated that there was a constant dull pain in the region of the swelling. Examination showed a swelling the size of an almond in the left inguinal canal, but easily reducible within the abdominal cavity. It had the characteristic elastic feel, and on aspiration I withdrew clear fluid. Two weeks later I operated, but unfortunately under ether the tumor remained, reduced within the abdominal cavity and I was unable to find the sac.

CASE III.—On May 6, I operated upon a third case, and the sac which I removed from this case is the specimen which I present to you this evening.

The history of the case is interesting inasmuch as it is a perfectly typical case, and moreover illustrates two methods of treatment.

The patient was a woman 29 years of age, married, with one child 11 years old. Six years ago without any cause other than a possible strain, she discovered a small swelling in the right inguinal region. It was never reducible, increased slowly in size until one year ago, when it had reached the size of a small hen's egg. At that time she consulted a physician, and being told she had a hernia she applied to the Hospital for Ruptured and Crippled for treatment. The diagnosis of hydrocele of the canal of Nuck was made by Dr. Milliken and the tumor was aspirated and several drachms of clear fluid withdrawn. It returned quickly and a second aspiration with carbolic acid injection was made a month later. The swelling remained very small until three months ago, when it began to increase rapidly in size and caused dull pain and much discomfort. The swelling in April, 1892, was the size of a small hen's egg, irreducible and of firm elastic feel. It was distinctly located in the inguinal canal. Aspiration showed the contents to be clear fluid and operation was advised.

On May 6, 1892, I made an incision 2½ inches long just above and parallel to Poupart's ligament. A serous sac the size of a small hen's egg was found just outside of the inguinal canal. On opening this several drachms of clear fluid escaped. The interior of the sac contained several thin walled partitions and the neck of the sac extended up into the abdomen, but was not pervious beyond the internal ring. The sac was so intimately adherent to the round ligament that a portion of the latter was removed with it. The sac was ligated at the internal ring and removed. The wound was closed with deep

buried sutures without drainage and the wound healed primarily without any reaction and the patient was up and about in 7 days.

The other cases having been treated by aspiration without operation have been simply tabulated and the important features noted.

Now that hydrocele of a true diverticulum of Nuck has been proved to actually occur, it is probable that many of the cases reported were of this variety. Although there was no operation to confirm the opinion, as evidence in favor of this view may be cited the fact that some of the cases give a history of having been at one time reducible.

The classification adopted by Regnoli, to which I have already referred, is in brief as follows. He divides all cases of hydrocele muliebris into five varieties.

*First variety.* A diffuse hydrocele or hydrocele occurring in the cellular tissue *enveloping* the round ligament, the cellular tissue having been transformed into a serous membrane, as frequently happens in a hydrocele of the spermatic cord.

*Second variety.* An accumulation of fluid in an actual prolongation of peritoneum into the inguinal canal, or a hydrocele of the canal of Nuck, proper, (the communication with the abdomen remaining). This variety Regnoli considered rare, no case having been observed up to his time to his knowledge.

*Third variety.* Different from the second variety, only in the fact that the pouch of peritoneum no longer communicates with the general abdominal cavity.

*Fourth variety.* An encysted hydrocele in the connective tissue about the round ligament (similar to the first).

*Fifth variety.* An accumulation of fluid in the remains of an old hernial sac.

The fifth variety is rare and can usually be readily diagnosed by the previous history of a hernia. Hydrocele of the hernial sac without the presence of a portion of irreducible omentum, and the history of long standing hernia is a rare complication. In the collections of McArdle and Kolipinski (23) (XXIX cases) these conditions almost universally obtained. Two of their cases are extremely doubtful, viz., cases of Curling and Duclas, the fluid in the hernial sac being far more probably an acute exudation due to

a strangulation of the bowel, a result that is very common. Two other cases were undoubtedly mistaken for hydrocele of the round ligament, (cases of Nerard and Tanfin.)

The remaining four varieties may for practical diagnosis be synthetically grouped into two main classes, viz., one including all those cases where the cyst is found in a true peritoneal prolongation or diverticulum of Nuck: the other, all cases where the cyst has developed in the cellular tissue about the round ligament.

This second variety is probably the more common judging from analogous cases of hydrocele of the spermatic cord.

In twelve cases of hernia in children upon which I have recently operated, this condition, viz., a hydrocele in the cellular tissue about the cord was found, quite independent of the true hernial sac, in three cases. This condition is very frequently diagnosed as adherent omentum.

*Aetiology.*—Very little is known as to the cause of the affection, as might be expected from its analogy to hydrocele in the male. Age seems to have little influence. The youngest case observed being three months old and the oldest sixty years. In the largest number of cases it occurred in middle life between the ages of thirty and fifty years.

Traumatism has been occasionally antecedent and doubtless has a causative influence.

Disturbances of menstruation and pregnancy have been regarded by some as playing an important role in producing the affection, but in the cases that I have observed I have not been able to verify this opinion. In one unpublished case, I have learned that the pain and discomfort were greatly aggravated at the time of menstruation.

The affection, like inguinal hernia, is found more frequently on the right side. In 63 cases in which the side was mentioned it was found on the left side in 25, on the right in 36 and on both sides in two cases.

*Size.*—The size varies within wide limits, from a hazel nut to a child's head. The contents of the cyst are usually clear straw-colored serum with a specific gravity, 1012–1016, containing a small amount of albumen and considerable sodium chloride.

## Diagnosis and Treatment.

That the diagnosis is more or less difficult is shown by the fact that the affection is so seldom recognized, being usually mistaken for and treated as a hernia, I believe that a differential diagnosis is possible in nearly every case if the following conditions are borne in mind.

Given a tumor of peculiar elastic feel distinctly located in the *inguinal canal* or extending up into the inguinal canal, not reducible (or rarely so), without impulse on coughing, with a history of having originated without apparent cause, of having existed for a considerable length of time, with a gradual increase in size accompanied by no constitutional and few local symptoms, other than a feeling of discomfort or slight pain, I should strongly suspect a hydrocele of the round ligament.

The diagnosis could then be easily confirmed by aspiration or by making use of the light test if the tumor were of sufficient size.

The point which I mentioned in regard to the tumor being distinctly located in the *inguinal canal* cannot be too strongly insisted upon.

I feel convinced from a careful reading of the cases reported that some were incorrectly diagnosed, and instead of being hydrocele of the canal of Nuck were really either hydrocele of the sac of a femoral hernia or cysts of the vulvo-vaginal glands. In several cases the observer has described the tumor as exactly in the region for femoral hernia, and the diagnosis rested entirely upon the character of the swelling and the contents as shown by aspiration.

The following case recently observed by myself and afterwards operated upon by Dr. W. T. Bull, at the New York Hospital; is directly in point and shows the possibility of such an error.

The patient was a woman 22 years of age, unmarried and in good general health.

Without any history of strain or apparent cause, a swelling had appeared in the right groin, three weeks before. There had been little actual pain, but considerable discomfort, especially during the last week. On examination I found a small swelling the size of an

almond, very firm and elastic, freely movable and situated in the right groin. It was at first thought to be above Poupart's ligament and a true hydrocele of the canal of Nuck, but later and more careful examination showed it to be just below, and the external ring was free. I aspirated and drew a small syringe full of serum, tinged with blood. She was seen again one week later, and as no change had taken place in the character or size of the swelling, an operation was advised and performed on February 15, 1892, by Dr. Bull. The swelling had diminished somewhat in size as a result of frequent examinations, but was shown to be below Poupart's ligament before the operation. An incision was made as for femoral hernia, and sac lined with peritoneum and partially distended with clear serum, was found emerging from the femoral opening and extending about an inch beyond. On incising the sac the fluid escaped, showing a perfectly empty cavity. A director was easily passed into the abdominal cavity and later a large probe ¼ inch in diameter, showing that the adhesions at the neck which had temporarily shut it off from the abdominal cavity must have been recent.

The sac was drawn down, ligated and excised and the operation completed as for an ordinary femoral hernia.

Here is a case that without operation or the utmost care in locating the swelling would have been recorded as a case of hydrocele of the canal of Nuck.

In one of the cases reported by King the swelling was described as in the "femoral region," and as no operation was performed other than aspiration, it must be regarded as a doubtful case. Dr. Bull has operated upon one other case similar to the one I have just described, and I have found a third case in literature, reported by Heddaus (25) in 1869, under the heading "Herniotomy Without a Hernia." The patient, a woman 38 years of age, had a swelling in the right femoral region the size of a walnut. As she had severe constitutional symptoms an operation was performed disclosing a cyst filled with fluid, but no rupture was found. She continued to grow worse and died 5 days later, with symptoms of general peritonitis. No autopsy was made.

The danger of confounding this affection with a cyst of the vulvo-vaginal glands must likewise be borne in mind.

In the second case reported by Dr. Wile the diagnosis is not above suspicion. A small swelling had appeared in the "right labium" 17 years before, had remained almost stationary until a few

months previous to his observation, at which time it, curiously associated with renewed marital relations and increased sexual activity, began to rapidly increase in size.

The tumor was described by Dr. Wile, as situated in the right labium the size of a turkey egg and "completely occluding the vagina." This description, together with the history of the case, makes a cyst of the vulvo-vaginal glands the more probable diagnosis.

In October, 1891, I operated upon a case at the Post-Graduate Hospital very similar to the preceding. The patient, a woman 47 years of age, had had a swelling in the right labium for several years. It had been repeatedly "lanced." At the time of my observation there was a swelling the size of an orange in the right labium extending up to the external ring. It was elastic and fluctuating, but not translucent. It had existed two years and had slowly increased in size, and gave rise to no symptoms. Both hernia and hydrocele of the canal of Nuck were excluded from the history and the location of the tumor and a diagnosis of cyst of Bartholini's gland was made, which was confirmed by the operation. The contents proved to be a chocolate colored fluid of syrupy consistence. The cyst wall very closely resembled a thickened hernial sac. It was a perfectly closed sac and extended from the lower portion of the labium major very nearly to the external ring. I dissected the sac entirely out and removed all the redundant, pendulous skin.

Primary union followed and the patient was about in a week.

An additional point that materially aids in the diagnosis is the position of the tumor when first noticed. The hydrocele of the canal of Nuck *always* appears *first* in the *inguinal canal*, and may gradually enter the labium, while the cyst of the vulvo-vaginal glands *always begins* in the *labium* and may later rise as far as the external ring. To the 62 cases in *Wechselmann's* collection I have added 30 others, including the 14 cases observed at the Hospital for Ruptured and Crippled, to which I have already referred, and which form the basis of this paper.

An analysis of these 92 cases not only gives us the requisite data to form a clinical picture sufficiently clear to enable us to make a diagnosis in most cases, but it also makes it possible for us to arrive at certain conclusions as to the best method of treating this disease. Of the 62 cases previously reported 22 were treated by operation, the sac being excised in most cases.

The remainder were treated by aspiration with the injection of iodine (or of some similar substance) or by simple operation.

There were two deaths, only one, however, was the result of the operation, the other being due to a co-existing acute tuberculosis of the lungs. Of the thirty cases that I have collected 12 were treated by operation and 18 by aspiration or aspiration with injection of iodine or carbolic acid. There were no deaths following the operation, and no recurrences, as the sac was in nearly every case excised. Of the 18 cases treated by aspiration and injection nine recurred and several of the others probably recurred, it not having been possible to trace them.

There are six cases, three in Wechselmann's and three in my collection,[1] in which the hydrocele of the canal of Nuck was associated with a separate hernial sac. The diagnosis was not made in any of the cases until the operation. I have purposely dwelt at considerable length upon the difficulties of diagnosis for the reason that they have an important bearing upon the question of the proper method of treatment. They show that the common method of aspiration and injection of some irritating fluid is not only open to the charge of being unscientific, but that in some cases it might be a source of actual danger, and they furnish additional evidence in favor of the radical operation, with excision of the sac. If the sac communicates with the abdominal cavity, a point that can only be settled by an operation, (as shown by two of the cases I have reported), it is manifestly unwise to inject an irritating fluid into such a sac.

On the other hand, even if the sac does not communicate with the abdomen, the operation will not have been done in vain for it furnishes an opportunity to close the canal and thus render the patient less liable to a hernia, to which the dilated and weakened canal predisposes, and furthermore, while equally safe, it offers a far better chance of a permanent cure of the hydrocele than any method of injection.

The accompanying table contains a summary of the thirty cases that I have collected, including my own observations at the Hospital for Ruptured and Crippled, in the clinic of Dr. William T. Bull.

[1]Berger, two cases; Bull, one case.

| | Observer and Reference | Age | Married or Single | Children | Duration | Side | Size | Symptoms | Treatment | Result | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lammert<br>La Riforma Medica, 1891, 181 | 39 | S | Yes | 11 Years | L | Fist<br>Pear shape | None<br>Irreducible | Operation—4 inch incision, 16 dr. clear fluid; excision sac. | Cure | |
| 2 | Franke<br>Archiv. f. Patholog. Anat., 1890, CXII, 458 | ? | ? | ? | 2 Days | R | Walnut — Supposed Fem. Hernia. | Pain — come on after lifting | Operation—sac filled with turbid fluid | Cure — granulation 5 weeks | |
| 3 | Smital<br>Wien Klin, Woch., 1889, 2, 800, 823, 845 | 36 | M | 1 | 6 Years | R | Goose egg | None | Op. July, '91—sac 6 ctm. long connected with abd. cov., small opening | Cure | |
| 4 | Berger<br>Bull et. Mem. de la Soc de Chir., 1891, 283 | 31 | ? | 0 | 3 Years | | Walnut | Slight pain—truss painful | Operation—excision | Cure | Associated with true hernial sac |
| 5 | Berger<br>Ibid | 23 | S | 0 | 6 Months | | Pigeon's egg | None of importance | Operation—excision, sac adherent to round ligament | Cure | Associated with a true hernial sac |
| 6 | Annales de la Soc Med-Chir. de Liége, Dec., 1891 | 45 | ? | ? | 1 Year | | | | Excision | Cure | Associated with a true hernial sac |
| 7 | Wright, J. W.<br>N. Y. Med. Jour., 1887, 45, 357 | 42 | ? | 0 | 6 Years | R | End thumb | None<br>Irreducible | Six operations | Final cure | |
| 8 | Wright<br>Ibid | ad. | M | 4 | Several Yrs. | L | Walnut | Occasional slight pain— irreduc. | Aspiration—twice | Cure | |
| 9 | Wright<br>Ibid | 28 | M | 2 | 2 Years | R | Pigeon's egg | Appeared soon after child birth—reduced first, later not | 2 aspirations | Cure | |
| 10 | Abbe Robert<br>Personal Communication | 23 | M | 0 | | | Almond | | Operation—excision sac | Cure | |

| | Observer and Reference | Age | Married or Single | Children | Duration | Side | Size | Symptoms | Treatment | Result | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Abbe Robert<br>Personal Communication | 25 | S | | | | Walnut | | Excision sac | Cure | |
| 12 | Bull, W. T.<br>N. Y. Hosp. Clinical Report of Op. Surg., W. B. Coley. N. Y. Med J., 1891 | 42 | M | 1 | 7 Years | R | Fist | Complication — with properitoneal hernia | Operation—sac had small communication with hernial sac, excision | Cure | |
| 13 | King<br>Canada Lancet, 1886 | 38 | M | ? | 7 Weeks | R | Small—irreduc. | Exact situation for Fem. Hernia | Tapped—clear serum recurred, second tappings 4 months later, iodine injection | Final cure | |
| 14 | Osborn<br>London Lancet, 1885, 1, 423 | 35 | S | | 7 Years | R | Pear—irreduc. | None | Tapped—½ pint canary colored fluid, several tappings finally iodine injected | Final cure | |
| 15 | Hare, Charles A.<br>Monograph case of hydrocele and canal of Nuck, D. Appleton & Co., 1872 | 45 | M | Yes | 15 Years | R | Egg—irreduc. | None | Operation for supposed strangulated hernia | Recurrence—sac not excised | ?<br>Probably omental hernia |
| 16 | Hospital for Ruptured and Crippled. Personal observation | 47 | M | 0 | 4 Years | L | Small egg (hen's) | Irreduc. — pain increased at menst. period | Operation Dec., 1891—excision sac | Cure in 9 days | |
| 17 | Ibid<br>Coley | 28 | M | 1 | 6 Years | R | Small hen's egg | Irreduc.— slight pain | Recurred from aspiration and injection, 6 years ago. Operation May, '92, excision sac | Cure up and about 7 days | |
| 18 | Ibid | 27 | M | 0 | 2 Months | L | Almond—reduc. | Pain slight—considerable discomfort | Aspiration at first, operation 1 month later, sac not found, and tumor reduced under ether, canal closed | Cure | |

| | Observer and Reference | Age | Married or Single | Children | Duration | Side | Size | Symptoms | Treatment | Result | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | Hospital for Ruptured and Crippled | 28 | S | | ? | R | Almond | None | Aspiration—iodine externally | Recurred | |
| 20 | Ibid | 35 | M | 1 | 1 Year | R | Almond | None | Aspiration | ? | |
| 21 | Ibid | 41 | | | 2 Months | | Almond—reducible to internal ring | None | Aspiration — operation advised, not consent | Recurred | |
| 22 | Ibid | 3 m. | | | | R | Hazelnut | None | Iodine externally | Hernia followed later | |
| 23 | Ibid | 31 | S | | 3 Years | R | Walnut Irreduc. | None | 1 aspiration<br>2 aspiration and injection iodine | Recurred | |
| 24 | Ibid | 4 | S | | 1 Month | R | Pigeon's Egg Irreduc. | None | Aspiration | Recurred | |
| 25 | Ibid | 3 m. | | | | R | Small | None | Aspiration | Recurred | |
| 26 | Ibid | 12 | | | 4 Weeks | L | Almond Irreduc. | None | Aspiration | ? | |
| 27 | Ibid | 50 | M | | 1 Year | L | Egg Irreduc. | None | Aspiration | ? | |
| 28 | Ibid | 28 | | | | R | Almond Irreduc. | None | Aspiration | ? | |
| 29 | Ibid | 28 | S | | 4 Years | L | Walnut | None | Aspiration | Recurred | |
| 30 | Senn Ref. Hand Book Med. Science, see Hydrocele | 42 | M | | 3 Years | | Anter. ⅔ of labium | None | Operation—excision sac | Cure | |

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