

APPENDICES FOUND AS CONTENTS OF FEMORAL HERNIÆ

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IN A review of femoral herniæ at Detroit Receiving Hospital, two cases were found in which the femoral contents consisted of appendices. A similar case was found at Detroit Grace Hospital. These cases prompted an analysis of all the femoral herniæ encountered at both the hospitals mentioned, from 1927 to 1933. Some interesting facts regarding the contents of these herniæ were revealed, and because of the rare occurrence of the vermiform appendix being in the sac, particular interest was centred on the three cases mentioned above. The analysis was made as to distribution, age and location. Particular attention was paid to the contents of these herniæ.

Of the ninety-seven cases in this series, sixty-eight were found at Receiving Hospital and twenty-nine at Grace Hospital. As to the difference in sex distribution, at Receiving Hospital there was none, thirty-five occurring in the males and thirty-three in the females; at Grace Hospital there was a greater variation, only eight occurred in males and twenty-one in females. Watson¹ states that at Mt. Sinai Hospital in New York femoral herniæ occurred four times more frequently in the female than in the male.

As to age, it was found that the youngest case was a patient nineteen years old; the oldest patient was seventy-seven years old. The average age at which the patient presented himself in the hospital was forty-seven years.

It was noted that sixty-two of the herniæ occurred through the right and forty-two through the left femoral opening. Only three cases had bilateral herniæ. These figures vary somewhat from those of Berger,² who quotes the incidence of bilateral herniæ as 20 per cent. of all femoral herniæ. However, it is possible that in our series of cases there were many cases of bilateral herniæ that were not noted, because the predominant pathology was on one side.

TABLE I

	Receiving Hospital	Grace Hospital	Total
NUMBER.....	68	29	97
Sex			
Male.....	35	8	43
Female.....	33	21	54
Side			
Right.....	43	19	62
Left.....	22	10	32
Bilateral.....	3		3

APPENDICES IN FEMORAL HERNIÆ

TABLE I *Continued*

	Receiving Hospital	Grace Hospital	Total
Age			
Youngest.....	19	25	19
Oldest.....	77	74	77
Average.....	47	45	47

Forty-two of the femoral herniæ in this series contained abdominal viscera. It is significant that of this group 40 were either strangulated or incarcerated. The largest single group involved small intestine as the contents of the sac; there were eighteen such cases. Thirteen cases contained omentum alone. Six cases contained intestine plus omentum and two cases contained bladder.

In our series, strangulation and incarceration of femoral contents were grouped as one. This group comprised 41 per cent. of the cases studied. The series studied at Mt. Sinai Hospital involved strangulation in 26 to 32 per cent. of the cases.

TABLE II

	Receiving Hospital	Grace Hospital	Total
Containing viscera.....	29	13	42
Strangulated or incarcerated.....	29	11	40
Appendices.....	2	1	3
Omentum.....	7	6	13
Omentum and intestine.....	4	2	6
Intestine.....	16	2	18
Bladder.....	0	2	2

(not in-
carcerated)

As to results, the problem became more difficult. The cases were handled and operated on by a number of different surgeons. Evaluation of operative procedures and results would be impossible. However, in this group, eighty-three of the ninety-seven cases were discharged as improved. Six had doubtful or unrecorded results. There were eight mortalities. Of this last group, two had refused operation. Of the remaining six cases, four were late obstructive cases, and because of the gangrenous condition of the bowel, had required intestinal resection. Two cases developed pulmonary complications, from which they died. All of these were late cases.

CASE I.—Patient R. C., white female, aged forty-eight years, was admitted to Detroit Receiving Hospital November 7, 1932, complaining of a painful mass in the right inguinal region. Patient stated that she had had a reducible mass in the right inguinal region for many years. Six days before admission it again appeared but she could not reduce it. She vomited the first day only. Patient was able to go about her work although the mass was growing gradually larger and becoming more painful. On admission patient did not appear acutely ill. Temperature was 99.6°, pulse 80, respirations 20.

On physical examination a reddened, tender, fluctuant mass was noted in the right groin over the middle of Poupart's ligament. The abdomen was soft. There were no areas of tenderness and no palpable masses in the abdomen. No spasticity or rigidity.

The mass was approximately the size of a walnut. The analysis of the blood showed: hæmoglobin 13.2 grams; red cells 4,120,000; white cells 10,350; the differential white count showed polymorphonuclears 86 per cent.; large mononuclears 2 per cent.; small mononuclears 12 per cent. The urine was normal.

A pre-operative diagnosis of an incarcerated femoral hernia containing omentum was made. Immediate operation was deemed advisable. At operation, the mass in the right groin was found to consist of a peritoneal sac containing necrotic material and a black necrotic appendix. The tip of the cæcum was also involved in an inflammatory reaction. The appendix was reduced bimanually through the femoral opening and removed from the abdomen in the usual manner. The femoral opening was closed and a herniorrhaphy was performed, with drainage of the peritoneal cavity provided for at the lower end of the incision. Apparently, the appendix, after passing through the femoral opening, had pointed back over Poupart's ligament, had become strangulated, necrotic and formed an abscess.

The pathological diagnosis on microscopical examination was severe subacute appendicitis, peritonitis, and omentitis. Clinical diagnosis of strangulated femoral hernia with an acute appendicitis and abscess formation was made. Patient's post-operative course in the hospital was uneventful and she was discharged in an improved condition with the incision well healed.

CASE II.—Patient G. C., white female, aged forty-one years, was admitted to Detroit Receiving Hospital on March 11, 1932, complaining of a painful tumor mass on the right side. She stated that she had had intermittent pain in the right inguinal region for the previous four years. During the last year she had noticed a mass in this region. This was not tender and was always reducible. Two weeks before admission the mass in the right groin again appeared but could not be reduced. This mass was tender. Patient had not vomited and bowels had been moving normally.

The examination of the blood showed: hæmoglobin 80 per cent.; red cells 4,200,000; white cells 16,200. The differential count revealed polymorphonuclears 84 per cent.; lymphocytes 16 per cent.

A pre-operative diagnosis of incarcerated right femoral hernia was made. Immediate operation was deemed necessary. At operation an incarcerated femoral hernia was found. When the hernial sac was opened, it was found to contain cæcum and a long appendix showing severe chronic inflammation. The appendix was removed in the usual manner and the hernia was then repaired.

The pathological diagnosis on microscopical examination was severe chronic appendicitis and peritonitis. The patient's post-operative course in the hospital was uneventful and patient was discharged in good condition.

CASE III.—White female, forty-seven years of age, was admitted to Grace Hospital January 26, 1933, with chief complaint of "rupture." By kind permission of Dr. Frank A. Kelly we are able to present this case.

Patient stated she had had the hernia for twelve years and that it had become larger of late. The blood cytology and other laboratory work was essentially unimportant. The patient's femoral hernia on the right side was repaired and it was found to contain a chronically inflamed appendix which was removed in the usual manner.

The patient's post-operative course was uneventful and she was discharged improved.

Pathological report: The appendix showed fibrosis of the entire wall with small round cell infiltration throughout. Diagnosis.—Chronic appendicitis.

Comment.—Of particular interest in this series were the three cases involving the presence of the appendix in the femoral sac: in one instance the appendix was actually strangulated and had become gangrenous. In the latter case, the appendix, after passing through the femoral opening had been

strangulated, became gangrenous, sloughed from the cæcum and formed an abscess below Poupart's ligament.

SUMMARY.—(1) A series of ninety-seven femoral herniæ are reported and analyzed, particularly as to their contents.

(2) The vermiform appendix was present in the sac in three of these cases.

(3) One of the contained appendices was strangulated and gangrenous. This was probably due to strangulation at the femoral ring.

(4) All three cases containing the vermiform appendix in the femoral sac were operated upon and recovered.

REFERENCES

¹Watson, L. F.: *Hernia*. St. Louis, C. B. Mosby Co., 1924.

²Berger, P.: Results in 10,000 Cases of Hernia. *Assoc. franc. de Chir. Proc. verb.*, vol. 9, p. 264, 1895.