

## การฝ่อลีบขององคชาตและอวัยวะจากการกดเบียดของไส้เลื่อนขนาดใหญ่ : รายงาน 1 รายในร่างครุใหญ่

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### Phallo-Orchido-Atrophy from a Huge Recurrent Indirect Inguinal Hernia : A cadaveric Case Report

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**หลักการและเหตุผล:** ในการชำแหละศึกษาบริเวณขาหนีบของร่างครุใหญ่ชายอายุ 77 ปี พบไส้เลื่อนแบบขาหนีบทั้งสองข้างและถุงอัณฑะขนาดใหญ่แต่องคชาตขนาดเล็กมาก จึงชำแหละศึกษาและสืบค้นประวัติการรักษาในโรงพยาบาลขณะมีชีวิตอยู่

**วัตถุประสงค์:** เพื่อศึกษาว่าภายในถุงไส้เลื่อนบรรจุอวัยวะใดและไส้เลื่อนนี้มีผลต่ออวัยวะข้างเคียงอย่างไร

**วิธีการศึกษา:** โดยการชำแหละบริเวณขาหนีบทั้งสองข้างเปิดถุงอัณฑะและผนังชั้นต่างๆของถุงไส้เลื่อน

**ผลการศึกษา:** พบว่าเป็นไส้เลื่อนแบบ indirect inguinal hernia ทั้งสองข้าง ข้างซ้ายมีขนาดใหญ่กว่าข้างขวามาก ภายในถุงไส้เลื่อนพบขดของลำไส้ใหญ่ยาว 8 นิ้วตุงเต็มถุงอัณฑะและกดเบียดอวัยวะทั้งสองข้างลงมาด้านล่างจนฝ่อเล็กกว่าปกติ spermatic cord ทั้งสองข้างถูกยึดจนเล็กบาง องคชาตถูกกดเบียดไปข้างขวาและหดเล็กลงเหลือยาว 1 นิ้ว ถุงไส้เลื่อนข้างขวามีขนาดเล็กเป็นแบบ incomplete indirect inguinal hernia ภายในบรรจุ mesentery จากประวัติการรักษา พบว่าครุใหญ่เคยผ่าตัดไส้เลื่อนข้างซ้ายเมื่อ 8 ปีก่อนเสียชีวิต หลังผ่าตัดกลับมารักษาไส้เลื่อนอีกจึงไม่ทราบว่ากลับมาเป็นซ้ำอีกเมื่อใดและใช้เวลานานเท่าใดจึงทำให้เกิดการฝ่อลีบขององคชาต อัณฑะและ spermatic cords ทั้งสองข้าง

**สรุป:** กรณีศึกษาในร่างครุใหญ่ชายอายุ 77 ปีเป็นไส้เลื่อนแบบ indirect inguinal herhia ทั้งสองข้าง ข้างซ้ายมีขนาดใหญ่เคยผ่าตัดแก้ไขเมื่อ 8 ปีก่อนเสียชีวิตแต่กลับมาเป็นซ้ำอีกภายในถุงไส้เลื่อนข้างซ้ายที่ยื่นลงมาตุงเต็มถุงอัณฑะบรรจุขดของลำไส้ใหญ่ยาว 8 นิ้วถุงไส้เลื่อนนี้กดเบียดอัณฑะและ

**Background:** A huge indirect inguinal hernia with tiny penis and a gigantic scrotum was observed in a cadaveric male of age 77 years. Clinical record from the hospital was retrospectively studied with the permission of his son and the hospital director.

**Objective:** To observe the hernial contents and its effects on the surrounding organs.

**Methods:** Dissection was carefully done in the inguinal regions, scrotal sac and hernial coverings.

**Results:** Bilateral indirect inguinal hernia with the predominantly large left side were observed. The scrotum was enlarged by a huge left hernial sac containing a long loop of sigmoid colon(8 inches long). This hernial sac put a great pressure on both testes, spermatic cords and pushed them inferiorly to the hernial sac until they were stretchedly thin and atrophied. The penis was pushed to the right and retracted to be tiny (1 inch long). The right hernial sac was incomplete indirect inguinal hernia containing the mesentery. His medical record revealed the history of the left hernial repair 8 years before death but did not report the recurrent time or any clinical sign of phallo-orchido-atrophy.

**Conclusion:** A case of 77 year old male cadaver with a huge recurrent indirect inguinal hernia was studied. The left hernial sac was larger than the right one and extended down to fill up and enlarge the scrotum. The content was a long loop of sigmoid colon (8 inches long). The huge hernial content put a great pressure on both testes,

spermatic cords ทั้งสองข้างลงมาด้านล่าง กดดันองคชาติ  
เอียงไปด้านขวาเป็นเวลานานจนเกิดการฝ่อลีบของอวัยวะ  
ดังกล่าว

**คำสำคัญ:** การกลับเป็นซ้ำของไส้เลื่อน การฝ่อลีบของอัณฑะ  
และองคชาติ

spermatic cords and the penis for a long period of time  
and consequently causing a phallo-orchido-atrophy.

**Keywords:** recurrent indirect inguinal hernia, phallo-  
orchido-atrophy

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## Background

The indirect inguinal hernia, the most common form, is believed to be congenital in occurrence. Its sac is the remain of the processus vaginalis (peritoneum) which enters the inguinal canal through the deep inguinal ring lateral to the inferior epigastric vessels. Its prevalence is higher in the males than females (20:1).<sup>1</sup> The recurrence rate following the operations is quoted from 1-7% at the end of two years.<sup>2</sup> The clinical cases are sporadically presented in Khon Kaen University Srinagarind hospital but the cadaveric case has not been evident in Khon Kaen University Medical School Department of Anatomy, especially the recurrent one with phallo-orchido-atrophy in the old male of 77 years that we reported hereinafter

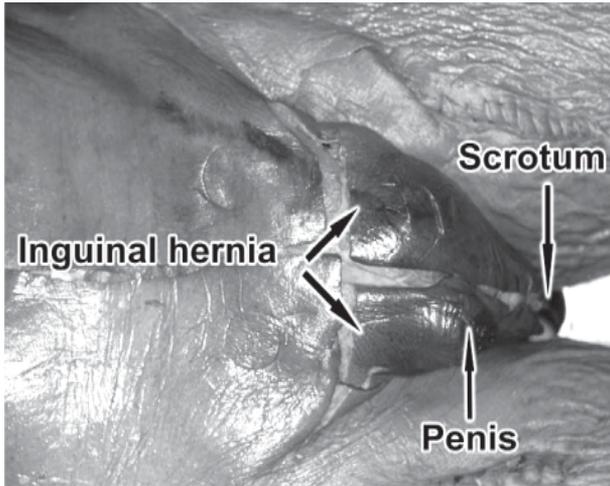
## Materials and methods

We obtained a legally donated body from Srisaket provincial center hospital who died at the age of 77 years which was 8 years after his hernial operation, herniorrhaphy on June 3, 1999. He was diagnosed with a mitral stenosis 2 years before his death on January 16, 2006. The embalmed body had been kept for 4 months before the dissection was carefully done in anatomy laboratory of Khon Kaen University, Faculty of Medicine on June 28, 2007.

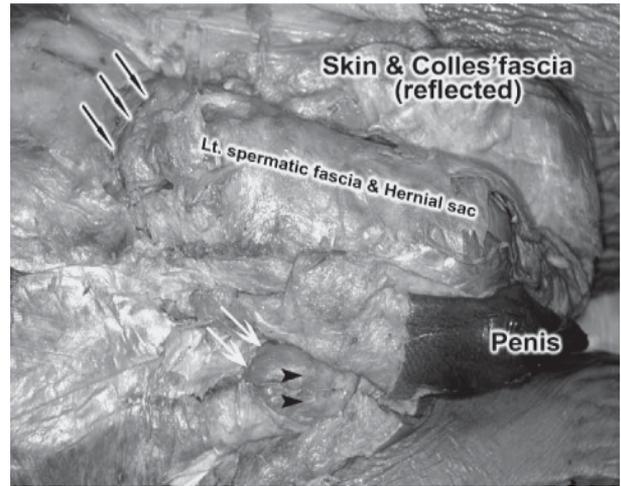
## Results

Marked swellings were observed on both sides of the inguinal regions. The scrotal sac was huge and extended

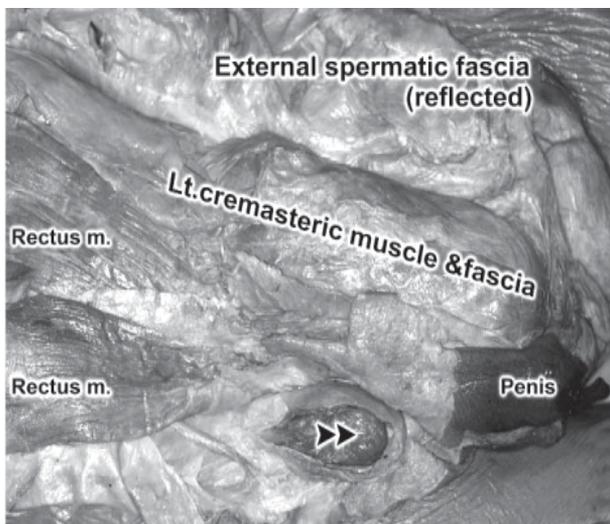
toward the knee joint. The inferior ends of the scrotal sacs were at about the midlength of the thigh. The penis was tiny and measured about 1 inch long and deviated to the right (Figure 1-5). After the incision through the layers of the hernial coverings was made from the superficial inguinal rings down to the inferior ends of the scrotal sac, the authors found the followings, 1) the left hernial sac was huge and it passed through the superficial inguinal ring (the surgeons called external inguinal ring) into the scrotal sac at the total length of 8 inches (Figure 2-3). The 3 layers of spermatic fasciae covering the hernial sac were clearly observed. After the longitudinal cut deep to the first line of incision through the external spermatic, the cremasteric, the internal spermatic fasciae, and the translucent peritoneum, we discovered a long loop of sigmoid colon, which is verified by the tenia coli (Figure 4) the left spermatic cord and the testis were pushed to be inferior to the hernial sac and to the right of the midline of the body. The spermatic cord was stretchedly thin while the testis looked normal by size. 3) The right hernial sac was much smaller or about the size of a thumb. When it was opened, we could reveal all 3 layers of the spermatic fasciae and translucent peritoneum covering, the fatty tissue of mesentery which passed beyond the external inguinal ring for 2 inches. 4) The right spermatic cord and testis were stretched and pushed by the left hernial sac inferiorly and resume a lower position. The spermatic cord was thinner than the left, and the testis was shrunk and smaller than the left one (Figure 5).



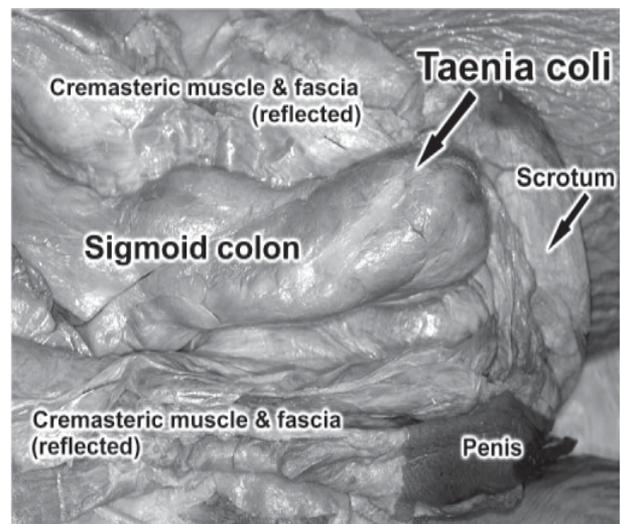
**Figure 1** The marked swellings of inguinal hernia were observed on both sides of the inguinal region. The scrotum was huge and extended to the mid-thigh. The penis was tiny, 1 inch long, and deviated to the right.



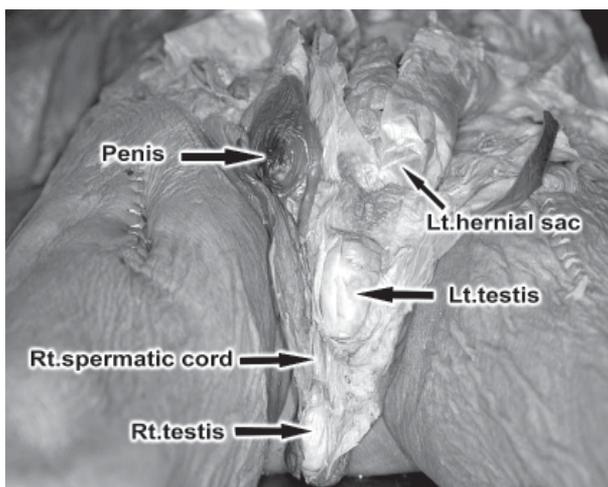
**Figure 2** The skin of the inguinal region and scrotum was reflected on both sides. Left side: A huge hernial sac covering by the spermatic fascia emerged from the external inguinal ring (black arrows) and extended down into the scrotum. Right side : The small hernial sac (black arrow heads) emerged from the external inguinal ring (white arrows) and extended down for 2 inches.



**Figure 3** The left inguinal hernia (above) : The external spermatic fascia was cut and reflected to show the cremasteric muscle & fascia covering the left hernial sac. The right inguinal hernia (below) : All 3 layers of spermatic fasciae were opened to show the hernial sac (black arrow heads) covering the fatty tissue of the mesentery.



**Figure 4** All of the left hernial coverings were cut and reflected to show a long loop of sigmoid colon. This huge loop of sigmoid colon of the left side put the great pressure on the penis and push it to deviate to the right.



**Figure 5** The scrotal sac was cut and opened to show both testes. The left testis was pushed below the huge left hernial sac. The right spermatic cord and testis were pushed by the left hernial sac to be lower than the left side. Noticed the smaller testis and tiny spermatic cord of the right side.

## Discussion

The case report herein is interesting in many ways. Why did it occur in both sides? Why was the left side in this case more predominant? What is the real prevalence in Thai population? Should we be interested in the recurrence? Our case was both primary and recurrent hernia.

The cause of the indirect inguinal hernia in infants is believed to be a patent processus vaginalis (PPV) which is cured by herniotomy<sup>3</sup>. The herniotomy is highly recurred after surgery in adults. They found that 12% of 599 patients with 45 years of mean age had PPV without clinical symptoms and 33% were male patients. The incidence showed that 55% with PPV were males, in which 59% were right sides and 29% were left sides while 12% of the hernias were bilateral. The recurrence rate of indirect inguinal hernia following the operations was at 1-7% at the end of two years.<sup>2</sup>

Our case was a bilateral one with the predominantly large left side. He was undergone a repaired operation on the left side 8 years ago and lost the follow up until death. There was no report of his hernial recurrent time and how long it took to cause a phallo-orchido-atrophy until it was found at the time of dissection. Its sigmoid colon content

must have put a great pressure on both testes and spermatic cord especially on the right side to cause ischemia long enough to become atrophy. A long loop of sigmoid colon also push the scrotal sac down to the mid-thigh. The spermatic cords on both sides thus stretched corresponding to the pathological descent of both testes. The enlargement of the scrotal sac pulled down the penile skin and the adjacent areas over the penis and also press on the penis. This finally resulted in a dystrophy of the phallus / penis in addition to the testes.

Van Wesseem, et al<sup>3</sup> established that the PPV prevalence in patients under 20 years was 22%, of those people between 20-30 years of age was 6%, those people between 30-50 years was 11%, patients over 50 years was 14%. We have to collect the cases many years yet to find the prevalence in the northeast Thailand.

The patent processus vaginalis (PPV) of 55% in the males at the mean age of 45 years is the proof for congenital in origin of the indirect inguinal hernia (van Wesseem). This predisposition condition could play an active part in our case. The contributing conventional risk factors are old age, chronic cough and heavy lifting since they lead to high intra-abdominal pressure. Chow, et al<sup>4</sup> presented that in 2001-2002 there were 70,000 inguinal hernia surgeries performed in England. Of these procedures, 62,969 were for the repair of primary hernia and 4,939 for the repair of recurrent hernias. The predisposing factors of recurrent inguinal hernia are age, sex, persistence of predisposing factors, weak abdominal musculature, faulty selection of cases, type of material used, imperfect homeostasis, faulty technique, missed sac, sepsis and exertion in the immediate post-operative period<sup>2</sup>. This report only confirmed the difficulty of the repair. The authors wish to see a study of incidence on the inguinal hernia patients presented to Srinagarind hospital to be a scientific data for future management.

It is quite surprising that a huge inguinal hernia such as this could bring about any other complications than phallo-orchido-atrophy, e. g. difficulty in walking and difficulty in passing the stool. The patient did not see the doctor, still. It is, therefore, quite likely that the prevalence of this hernia in Thai population is much less than the reality. The severe complications like strangulation and/or intestinal obstruction that could be life threatening should be widely publicized and

persuade the patients to undergo early surgery before it turns to chronic and causing the other permanent complications.

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