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Sudden Death on Young Adult Caused by Acute Pulmonary Embolism before Extra Peritoneal Laparoscopic for Inguinal Hernia Repair: A Case Report and Literature Review

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Keywords:

Pulmonary Embolism; Inguinal Hernia; Laparoscopic surgery; TAPP; TEP; Sudden Death.

1. Abstract

Inguinal hernia is regarded as a common and frequently occurring disease in general surgery, of which indirect inguinal hernia is most commonly discovered, especially in the elderly. In the treatment of inguinal hernia, surgery serves as the best way to treat inguinal hernia. In the previous clinical literature, some cases of pulmonary embolism

have been reported [1,2] in traditional inguinal hernia surgery of inguinal hernia, but it has not caused the necessary clinical research and attention [5]. Likewise there is little to no literature concerning preoperative venous thrombolitic event before a surgical inguinal hernia repair.

This is a case report of a 35 year old male, who was diagnosed with inguinal hernia after clinical examination. Prior to surgical repair he presented signs of acute pulmonary embolism, confirmed by a cardiac and chest ultrasound. He was then sent to ICU, managed accordingly but died a few hours later. This case report enlights a very uncommon association in an attempt to understand how herniation can lead a venous thromboembolic event.

2. Introduction

Inguinal hernia is regarded as a common and frequently occurring disease in general surgery, of which indirect inguinal hernia is most commonly discovered, especially in the elderly. In the treatment of inguinal hernia, surgery serves as the best way to treat inguinal hernia. In the previous clinical literature, some cases of pulmonary embolism

have been reported [1-4] in traditional inguinal hernia surgery of inguinal hernia, but it has not caused the necessary clinical research and attention [5]. Likewise there is little to no literature concerning preoperative venous thrombolitic event before a surgical inguinal hernia repair. Hence this case presenting a rare occurence of pulmonary embolism prior to a surgical repair of an inguinal hernia, in an attempt to explore the direct relationship between these two events.

3. Case Presentation

This is a case report of a 35 year old male, who was diagnosed with inguinal hernia after clinical examination. Prior to surgical repair he presented signs of acute pulmonary embolism, confirmed by a cardiac and chest ultrasound. He denied Coumadin for anticoagulation therapy. On physical examination, the patient denied orthopnea, and tachycardia. Loud systolic murmurs were heard in aortic areas on cardiac auscultation…, slight Right hemi paresis was noted. The remaining physical examination was unremarkable. The brain CT scan was unremarkable thrombotic deposit with a preserved EF: 56%).

He was then sent to ICU, managed accordingly but died a few hours later. This case report set in lights an uncommon association in an attempt to understand how herniation can lead a venous thrombo embolic event.

4. Discussions

PE treatment and diagnosis are frequently delayed because of the complex and nonspecific clinical manifestations [1]. Only 30% of patients are diagnosed to PE who accepted to normal test [2]. Young patients have little basic disease, making it more difficult to diagnose PE, so prevention of PE should be paid more attention. The main risk factors for PE are external injuries, bone fractures,

and thrombosis in the veins of the lower extremities. Research indicates that 70% to 90% of thrombi in patients with acute PE originate in the peritoneal cavity, pelvic cavity, and deep veins [3]. Thus, we could reduce the incidence of PE if we remove the risk factors. For young patients, external injuries and bone fractures have been evaluated, but vocational factors have been largely overlooked, such as long-haul truck drivers, electric welders, office workers, pipeline fabricators, therfore those in similar professions should exercise their lower extremities often and take regular physical examination (exercices?). On the other hand, hernia is clinically diagnosed and management is usually started with no delay. Laparoscopic inguinal hernia repair, which is regarded as a low risk procedure for VTE, has potential risks for VTE development in the perioperative period. The risks come from both surgical procedures and intrinsic patient characteristics [10] (Figure 1 and 2).

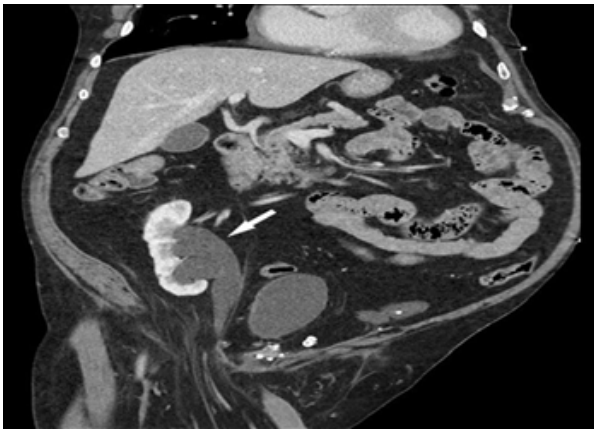

Figure 1: CT Scan showing

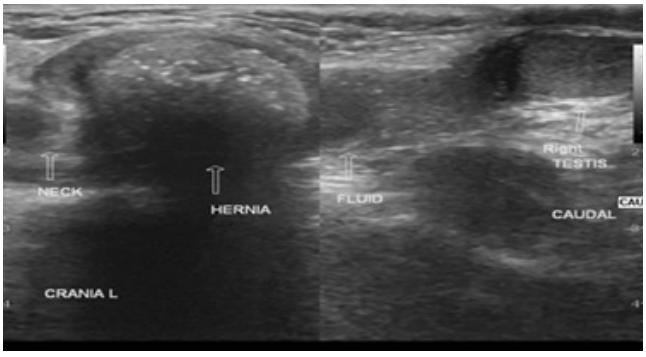

Figure 2: Ultrasound showing incarcerated Hernia in the inguinal canal

5. Conclusions

It is of interest to always hold preoperative multidisciplinary discussions. Although laparoscopic inguinal repair is very common, Clinicians should consider both the strength of individual risk factors and the cumulative weight of all risk factors prior to surgery. A full VTE risk assessment is essential with proper prophylaxis measures especially in quality-of-life procedures [10]. Attention should also be paid to the possibility of a coagulation chemoprophylaxis pior to hernia repair. With low evidence and almost no literature, the link between hernia and PE still remain unclear but opened for futher investigation.

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