



Epigastric and Umbilical Hernia; Work Relatedness and Return to Work

Ramin MEHRDAD¹, Khosro SADEGHNIAT HAGHIGHI¹, *Amir Hossein NASERI ESFAHANI^{1, 2}

1. *Center for Research on Occupational Diseases, Tehran University of Medical Sciences, Tehran, Iran*

2. *Dept. of Occupational Medicine, School of Medicine, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*

***Corresponding Author:** Email: occupationalmedicine@yahoo.com

(Received 12 Dec 2012; accepted 11 Feb 2013)

Abstract

Abdominal wall hernia is common but reliable scientific data about its work relatedness is very limited and inconsistent. In this paper, a less common type of abdominal wall hernia in a 30 year old male worker is presented with recurrence after first surgery when he returned to work. In contrast with almost all kinds of hernia, a lifelong limitation for heavy lifting was recommended. It seems that contrary to popular belief, work relatedness of abdominal wall hernia is seriously doubtful, although conclusive evidences are not enough. It is preferable to make decisions cautiously for return to heavy duties of work after surgery of large umbilical, umbilical & epigastric or incisional hernia, while avoiding recommendations for long days off work after surgery of any hernia.

Keywords: Abdominal Wall Hernia, Work Relatedness, Fitness

Introduction

Abdominal wall hernia reflects structural defect in abdominal wall. It is believed that aging, smoking and increase in intra-abdominal pressure (e.g. obesity, chronic obstructive lung disease, prostatic hypertrophy, hemorrhoids, heavy lifting) may cause hernia (1-4), therefore litigations in this area, especially for its work relatedness, are frequent, although nowadays some studies would shed significant doubt on the importance of raised intra abdominal pressure as a significant factor in the formation of abdominal wall hernia (5,6).

Lifelong prevalence of abdominal wall hernia in the U.S. general populations is 5% and 2% among adult male and female respectively and median days away from work of any new case is 25 days (7). In Britain, 80000 operations for abdominal wall hernias are performed annually, which costs a lot to health system and society (6). Inguinal her-

nia contains about 80% of abdominal wall hernias and all other kinds of abdominal wall hernia contains only remaining 20%. Co-incidence of epigastric and umbilical hernia is very less common (6).

A study conducted in a hospital in Iran during a period of 15 months showed that, from 933 surgeries of abdominal wall hernia, only one case was epigastric and umbilical hernia (8). Generally, the references of this article are based on abdominal wall hernia, not specifically of epigastric and umbilical hernia. This is for two main reasons; first, being epigastric and umbilical hernia in adult studies and work relatedness is very little. Second, the general nature of abdominal wall hernias is similar. This is not the case in the field of surgery but occupational diseases therefore the surgical details and techniques have not been discussed.

Case Report

A 30 years old man with abdominal wall hernia and recurrence after first surgery was referred for work relatedness evaluation. He was working in an industrial electrical panel manufacturing company on the outskirts of Tehran, the capital of Iran, as an electrical assembler from 2002 to 2009. Carrying pieces between 20 to 100 kg with or without trolleys was a part of his job duties. The results of pre-employment and annual periodic examinations which had been performed by occupational medicine specialists were normal. Occupational hygienist reported insufficient training, supervision, control of health hazards and protective equipments. The worker had three work accidents in his occupational history.

In the latest, May 2008, he was referred to hospital because of protruded mass followed by sudden sever pain in his abdomen while lifting a transformer and had an emergency open surgery with anatomic repair of defect without any bowel resection. His surgeon wrote for employer that: "The patient had epigastric and umbilical hernia with some necrosis in mesenteric and abdominal wall fat due to heavy duties of work". Postoperative clinic visit evaluation was normal. After discharge, the surgeon advised two months off work and then six months away from heavy duties or lifting over five kilograms. The patient returned to work two month later but his employer forced him to lift things as before. Six months after the first surgery, the worker agreed with another surgery because of abdominal pain due to recurrence of hernia and employer dismissed him. He had not history of professional exercise, smoking or any other disease. In this case, regardless of being right or wrong in the surgeon's clinical performance and subsequent career advice, employer was incriminated only for recurrences of hernia because of early usage of worker against physician opinion. Finally, after second surgery with prosthetic repair of defect, the worker returned to his work with lifelong limitations for heavy lifting without any decrease in his wage.

Discussion

Although combination of epigastric and umbilical hernia is less common but overall incidence of abdominal wall hernia is considerably high and many people and even physicians believe that the hernia is work related and many limitations after surgery are mandatory. Also a worker who has abdominal wall hernia usually hears inconsistency messages about nature of his disease from his family physician, surgeon, occupational medicine specialist and other involved healthcare providers. Because of these, many time and money spend for associated litigations (6,7). Finally, results of these litigations are inconsistent because reliable scientific data about work relatedness & fitness after surgery of abdominal wall hernia are scarce.

In a study incidence of hernia was determined according to occupation with Annual Survey of Occupational Injury and Illness from the Bureau of Labor statics (BLS) in 1994. Results show a spectrum of relative risk from 2.47 (CI 95%, 2.14-2.80) for handler, equipment cleaner, helper and laborers to 0.13 (CI 95%, 0.03-0.24) for executive, administrative and specialty occupations but this study was based on employer's reports of work related cases of hernia and may be influenced by their belief that the two are related (7). It has been suggested that any lifting activity results increase in intra-abdominal pressure and may lead to abdominal wall hernia. In a study, intra-abdominal pressure in many postures and activates was determined with a noninvasive technique and demonstrated only modest rise in intra-abdominal pressure during lifting. If this is done correctly that is very lower than intra-abdominal pressure during jumping or standing cough (5). Development of an abdominal wall hernia even after a single strenuous event or trauma is highly unlikely (9). Recently a literature review has compared all available scientific data about work related aspect of hernia especially inguinal hernia and finally has questioned traditional association between heavy lifting and inguinal hernia and indirectly, all types of abdominal wall hernia (6). Although work relatedness of abdominal wall hernia is seriously

doubtful, but conclusive evidences are not enough and it may provide an important area for research on surgical and occupational diseases. The writers suggest that, for the nonce, in work relatedness determination of similar cases, decide separately about any cases with detailed history of patient about exercise, smoking, occupation, habits, lung disease or diseases those attributable to increase intra-abdominal pressure such as varicose, disc herniation, hemorrhoid.

In this case and other similar cases return to work and fitness for work after surgery is other problem. Health care providers think very different about suitable interval between surgery, discharge, return to work or return to heavy or manual work and their opinions are subject to change but the trend towards early return to work is continues. Many factors such as personality of patient, job satisfaction and technique of surgery and correct application of prosthetic mesh support may affect retune to work (6, 10). For example, Laparoscopic repair may results in earlier return to work than open technique (11) or surgeries if divide or trap the scrotal branch of the ilioinguinal nerve cause pain or hypoaesthesia and can delay a return to full activity (12), nonetheless an important factor determining the days between surgical treatment and return to work is motivation (13). Some physicians recommend an interval off work time of up to three months, and light work for 3-6 months after operations of simple and small hernia however there is not enough evidences to support such a prolonged period of inactivity for example in integrity of a repair or decrease rate of reoccurrence (6,14-16).

In recent years, many reliable scientific papers decrease their recommendations about days off work after surgery of a hernia and now, for example in laparoscopic repair of a simple inguinal hernia, they recommend only 3-5 days off work and 1-2 weeks modified work (17-20) or decrease time of return to work after large incisional or umbilical hernia from 12 weeks (19) to 3-5 weeks (20). Interestingly some references prohibit lifelong return to heavy duties of work after surgery of large incisional or umbilical hernia (19) and some others have not recommendations about return to ma-

nual work after surgery of these kinds (20). In our case, although there is no exact data about return to heavy duties of work after surgery of simultaneous epigastric and umbilical hernia but we think, because the nature and extent of defect is similar to large incisional or umbilical hernia, it is preferable that he avoids lifting heavy objects lifelong especially after second surgery for reoccurrence. It is clear that consultation with expert occupational physicians before return to work of similar cases may be helpful.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

Acknowledgement

The authors declare that there is no conflict of interest.

References

1. Abramson JH, Gofin J, Hopp C, Makler A, Epstein LM (1978). The epidemiology of inguinal hernia. A survey in western Jerusalem. *J Epidemiol Community Health*, 32(1): 59-67.
2. Rüssel RCG, Williams NS, Bulstrode CJK (2004). *Bailey and Love's: Short Practice of Surgery*. 24th ed. Hodder Arnold, UK.
3. Sorensen LT, Friis E, Jorgensen T, Vennits B, Andersen BR, Rasmussen GI, et al. (2002). Smoking is a risk factor for recurrence of groin hernia. *World J Surg*, 26(4): 397-400.
4. Arena JJ, Rodriguez-Vielba P, Gallo E, Tinoco C (2002). Hernias of the abdominal wall in patients over age of 70 years. *Eur J Surg*, 168(8-9): 460-3.
5. Cobb WS, Burns M, Kercher KW, Matthews BD, James Norton H, Todd Heniford B (2005). Normal intraabdominal pressure in healthy adults. *J Surg Res*, 129(2): 231-35.

6. Hendry PO, Paterson-Brown S, de Beaux A (2009). Work related aspects of inguinal hernia: A literature review. *The Surgeon*, 6(1): 361-365.
7. Kang SK, Burnett CA, Freund E, Sestito J (1999). Hernia: is it a work-related condition? *Am J Ind Med*, 36(6): 638-44.
8. Sadati K (2001). The study of the relative prevalence of abdominal wall hernias and their complications in Zanjan Shafieh hospital from March 1, 1999 to June 1, 2000. *J Zanjan Univ Med Science Health Serv*, 35(9): 47-51. [Article in Persian]
9. Pathak S, Poston CJ. It is highly unlikely that the development of an abdominal wall hernia can be attributable to a single strenuous event (2006). *Ann R Coll Surg Engl*, 88(2): 168-71.
10. Letz G, Christian JH, Tierman SM (2007). Disability prevention and management. In: *Current occupational & environmental medicine*. Ed, LaDou J. 4th ed, Mc Graw Hill, New York, pp.: 21-35.
11. Taylor EW, Dewar EP (1983). Early return to work after repair of a unilateral inguinal hernia. *Br J Surg*, 70(10): 599-600.
12. Alfieri S, Rotondi F, Di Giorgio A, Fumagalli U, Salzano A, Di Miceli D, et al. (2006). Influence of preservation versus division of ilioinguinal, iliohypogastric, and genital nerve during open mesh herniorrhaphy: prospective multicentric study of chronic pain. *Ann Surg*, 243(4): 553-8.
13. Salcedo-Wasicek MC, Thirlby RC (1995). Post operative course after inguinal herniorrhaphy. A case-controlled comparison of patients receiving workers' compensation vs patients with commercial insurance. *Arch Surg*, 130(1): 29-32.
14. Bourke JB, Taylor M (1978). The clinical and economic effects of early return to work after elective inguinal hernia repair. *Br J Surg*, 65(10): 728-31.
15. Bourke JB, Lear PA, Taylor M (1981). Effect of early return to work after elective repair of inguinal hernia: Clinical and financial consequences at one year and three years. *Lancet*, 2(8247): 623-5.
16. Stoker DL, Spiegelhalter DJ, Singh R, Wellwood JM (1994). Laparoscopic versus open inguinal hernia repair: randomised prospective trial. *Lancet*, 343(8908):1243-5.
17. Shulman AG, Amid PK, Lichtenstein IL (1994). Returning to work after herniorrhaphy. *BMJ*, 309: 216-7.
18. Wellwood J, Sculpher MJ, Stoker D, Nicholls GJ, Geddes C, Whitehead A, et al. (1998). Randomized controlled trial of laparoscopic versus open mesh repair of inguinal hernia. *BMJ*, 317:103-10.
19. Samuel AM, Mc Coll I (2000). Surgery. In: *Fitness for work*. Eds, Palmer KT, Cox RAF, Edwards FC. 3rd ed, Oxford University Press, Oxford, pp.: 435-52.
20. Samuel AM, Wellwood JMcK (2007). Fitness for work after surgery. In : *Fitness for work*. Eds, Palmer KT, Cox RAF and Brown I. 4th ed, Oxford University Press, Oxford, pp.: 467-86.