

Original Research Article

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A triad of ventral hernia, cholelithiasis and uterine fibroid in females and ventral hernia, cholelithiasis and benign prostatic hypertrophy in males

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ABSTRACT

Background: This study describes the concurrence of ventral hernia, cholelithiasis and uterine fibroid in females and ventral hernia, cholelithiasis and benign prostatic hypertrophy in males.

Methods: This is a prospective observational study of 100 patients of ventral hernia, cholelithiasis and uterine fibroid in females and ventral hernia, cholelithiasis and benign prostatic hypertrophy in males.

Results: In this study, ventral hernia, cholelithiasis and uterine fibroid in females and ventral hernia, cholelithiasis and benign prostatic hypertrophy in males were observed.

Conclusions: This is to specify the presence of more than one symptom in a patient may suggest presence of multiple diseases.

Keywords: Navya's triad, Ventral hernia, Cholelithiasis uterine fibroid, Benign prostatic hypertrophy

INTRODUCTION

The term cholelithiasis may refer to the presence of gallstones or to the diseases caused by gallstones.¹ Ventral hernia refers to hernias of anterior abdominal wall except groin hernia uterine fibroids, also known as uterine leiomyomas or fibroids, are benign smooth muscle tumours of the uterus.² Benign prostatic hyperplasia (BPH), also called prostate enlargement, is a noncancerous increase in size of the prostate gland.³

Early diagnosis is important in evaluating the exact clinical status of a patient and thus will help in obtaining a more satisfactory response to a treatment. A few decades ago the coexistence of multiple diseases will cause some delay in reaching exact diagnosis. A frequent site for multiple abnormalities has been the

gastrointestinal tract where multiple combinations of diseases have been encountered.

The exact pathogenesis is unknown, but may be due to combination of factors such as age, obesity, comorbid conditions, constipation, chronic illness, congenital weakness and previous surgeries may be responsible for the development of ventral hernia, cholelithiasis and uterine fibroid or BPH.³⁻⁵ Advanced age, smoking, alcohol and diabetes mellitus are direct risk factors for development of the development of this triad.^{6,7} Past surgical history leads to development of Incisional hernia due to various surgical faults or poor patient conditions.⁸ Unless the exact status of the gastrointestinal tract is clarified, treatment, medical or surgical is sometimes misdirected at a condition first diagnosed but which actually may be asymptomatic or contribute least to the

patient's discomfort, while the more distressing lesion may be completely overlooked. This may be illustrated by the occasional persistence of symptoms in a patient, following cholecystectomy, which ultimately may be shown to be related to a previously unappreciated ventral hernia rather than to the gallstones recognized first.

Aims and objectives

The objective of the study was to emphasize the possibility of multiple separate diseases might be responsible for patient's signs and symptoms without pathological evidence.

METHODS

This is a prospective observational study of 100 patients of ventral hernia, cholelithiasis and uterine fibroid in females and ventral hernia, cholelithiasis and benign prostatic hypertrophy in males admitted in General Surgery Department with the help of Gynaecology Department of Konaseema Institute of Medical Sciences, Kims, Amalapuram, Andhra Pradesh, India after obtaining Ethical clearance from the Patients from June 2017 to August 2019. Data is represented in tabular columns. This study includes Clinical examination and Radiological imaging. Clinical examination includes history and examination of lump (inspection, palpation, percussion and auscultation) in case of ventral hernia and large fibroid and per rectal examination for benign prostatic hypertrophy, radiological examination includes ultrasound abdomen for ventral hernia, uterine fibroid and cholelithiasis and ultrasound pelvis for benign prostatic hypertrophy.

Inclusion criteria

Inclusion criteria were males with cholelithiasis, ventral hernia and benign prostatic hypertrophy; females with cholelithiasis, ventral hernia, and uterine fibroid.

Exclusion criteria

Patients with only one or two diseases in my triad were excluded.

RESULTS

In this triad, ventral hernia, cholelithiasis and uterine fibroid in females and ventral hernia, cholelithiasis and benign prostatic hypertrophy in males were observed.

In this study, 100 cases were observed. In those 50 were males and 50 were females. In 100 cases, we observed a triad of ventral hernia, cholelithiasis and uterine fibroid in females or benign prostatic hypertrophy in males. In these cases 100 were ventral hernia, 100 were cholelithiasis, 50 were uterine fibroid and 50 were benign prostatic hypertrophy. Ventral hernia includes epigastric

hernia, umbilical hernia, para umbilical hernia, incisional hernia, spigelian hernia and lumbar hernia.

Table 1: Number of males and females involved in the following diseases.

	Males	Females	Total
Ventral Hernia	50	50	100
Cholelithiasis	50	50	100
Uterine fibroid	-	50	50
Benign prostatic hypertrophy	50	-	50

Table 2: Number of cases operated in each disease.

	Total	No. of cases operated
Ventral Hernia	100	57
Cholelithiasis	100	38
Uterine fibroid	50	13
Benign prostatic hypertrophy	50	17

In these cases some were symptomatic and some were asymptomatic. Only symptomatic cases underwent surgery. Out of 100 cases of cholelithiasis, 38 were operated, out of 100 of ventral hernia 57 cases were operated, out of 50 cases of uterine fibroid, 13 were operated, out of 50 cases 17 were operated.

Table 3: Number of patients with the following clinical features.

	%
Pain abdomen	93
Lump abdomen	57
Nausea and vomitings	31
Dizziness	23
Burning micturition	47

In this study, most of the patients came with history of pain abdomen (93%) and lump abdomen (57%) with occasional nausea, vomiting, dizziness and burning micturition.

Table 4: Risk factors and no of patients affected.

Risk factor	No of patients affected	% of patients affected
Age >50 yr	76	76
Sedentary life style	82	82
Obesity	95	95
Smoking	61	61
Alcohol	53	53
Diabetes mellitus	68	68
Hypertension	47	47
Chronic lung diseases	39	39
Past surgical history	68	68

Most of them were obese (95%), with sedentary lifestyle (82%), above the age group of 50 yrs (76%) and presented with comorbidities like Diabetes mellitus, chronic lung diseases. History of smoking (61%) and alcohol intake (53%) were present in most of the members. Past history of most of the patients revealed cholecystectomy or hernioplasty or hysterectomy or TURP or Bowel surgery or Emergency abdominal operations (68%). Some patients present with symptoms suggestive of multiple diseases without past surgical history. While undergoing ultrasound abdomen and pelvis, it has been showed that the presence of multiple diseases in a single patient with multiple symptoms. Few patients after few years of surgery for one disease again noted symptoms of gastro intestinal or urinary complaints thinking them as recurrent disease. Some patients present with low Hb, high cholesterol, altered LFTs with normal or unstable vitals. This is to emphasize the importance of clinical examination and imaging techniques to discover alterations in GIT since there may be considerable overlapping of symptoms produced by each member of triad. This thorough examination and imaging techniques will help in reaching a decision for the proper choice of therapy and may tend to reduce the unsatisfactory results obtained in treating digestive complaints.

DISCUSSION

This triad describes the concurrence of ventral hernia, cholelithiasis and uterine fibroid in females and benign prostatic hypertrophy in males. The exact pathogenesis is unknown, but may be due to combination of factors such as age, obesity, comorbid conditions, constipation, chronic illness, congenital weakness and previous surgeries may be responsible for the development of ventral hernia, cholelithiasis and uterine fibroid or BPH.^{4,5,9} It may be due to sedentary lifestyle which may lead to obesity, which causes strain and pressure on abdomen causing weakness of abdominal wall muscles which leads to ventral hernia.⁴

Increased cholesterol production in liver, higher cholesterol levels in bile, difficulty in emptying the gall bladder which are seen in obesity may lead to gall stones formation.⁵ Obesity is linked to higher rates of circulating estrogen levels in premenopausal women with Anovulatory cycles, higher estrogen production from fat cells in post-menopausal women, decreased serum hormone binding globulin causing increased unbound and circulating estrogen levels which leads to uterine fibroids.⁹ Obesity causes increased intra abdominal pressure, altered endocrine status, increased sympathetic nervous system activity, increased inflammation process and oxidative stress, all of which are favourable in the development of BPH.¹⁰ Advanced age, smoking, alcohol and diabetes mellitus are direct risk factors for the development of this triad.^{6,7} Past surgical history leads to development of Incisional hernia.⁸ Patients with obstructive voiding dysfunction due to BPH may need to

strain for voiding, and this effort over time may have a direct impact on the abdominal wall, which in turn contributes to the development of incisional hernia.¹¹ Surgical stress leads to weight loss which may be responsible for the development of Gall stones. It also causes increased estrogen levels which leads to uterine fibroid and decreased testosterone which causes ventral hernia due to decreased muscle tone.⁹ Metabolic syndrome may be responsible for the development of this triad. Increased abdominal pressure due to large uterine fibroid may cause weakening of the abdominal wall muscles which causes ventral hernia.¹² The AR gene is responsible for the development of both BPH and uterine fibroid.^{13,14} The coincidence of 3 common symptoms seen in this Triad is to challenge Occam's razor that differential diagnoses should be pared down to a single explanation.¹⁵

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A gallstone is a stone formed within the gallbladder out of bile components.¹⁶ The term cholelithiasis may refer to the presence of gallstones or to the diseases caused by gallstones.¹ Most people with gallstones (about 80%) never have symptoms.^{16,17} When a gallstone blocks the bile duct, a cramp-like pain in the right upper part of the abdomen, known as biliary colic (gallbladder attack) can result.¹⁸ This happens in 1-4% of those with gallstones each year.¹⁸ Complications of gallstones may include inflammation of the gallbladder (cholecystitis), inflammation of the pancreas (pancreatitis), jaundice, and infection of a bileduct (cholangitis).^{18,19}

Symptoms of these complications may include pain of more than five hours duration, fever, yellowish skin, vomiting, dark urine, and pale stools.¹⁸ Diagnosed by ultrasonography. Medical dissolution of stones and cholecystectomy are used as treatment.

Ventral hernia refers to hernias of anterior abdominal wall except groin hernia.¹² It includes epigastric hernia, umbilical hernia, para umbilical hernia, incisional hernia, spigelian hernia and lumbar hernia.¹² Patient presents with different symptoms depending upon the type of hernia. Surgery is the treatment of choice.⁸

Uterine fibroids, also known as uterine leiomyomas or fibroids, are benign smooth muscle tumors of the uterus. Most women have no symptoms while others may have painful or heavy periods. If large enough, they may push on the bladder causing a frequent need to urinate. They may also cause pain during sex or lower back pain.

A woman can have one uterine fibroid or many. Occasionally, fibroids may make it difficult to become pregnant, although this is uncommon. The exact cause of uterine fibroids is unclear. However, fibroids run in families and appear to be partly determined by hormone levels. Risk factors include obesity and eating red meat. Diagnosis can be performed by pelvic examination or imaging. Treatment is typically not needed if there are no symptoms. NSAIDs, such as ibuprofen, may help with pain and bleeding. Prognosis Improve after menopause. Frequency ~50% of women by age 50.² Uterine artery embolization and Surgery are used for the treatment.² Cancerous versions of fibroids are very rare and are known as leiomyosarcomas.² After menopause, they usually decrease in size.² Some large fibroids can extend out through the cervix and vagina.²⁰

Familial leiomyomata, a syndrome (Reed's syndrome) that causes uterine leiomyomata along with cutaneous leiomyomata and renal cell cancer has been reported.²¹ This is associated with a mutation in the gene that produces the enzyme fumarate hydratase, located on the long arm of chromosome 1 (1q42.3-43). Inheritance is autosomal dominant.

Benign prostatic hyperplasia (BPH), also called prostate enlargement, is a noncancerous increase in size of the prostate gland.³ Symptoms may include frequent urination, trouble starting to urinate, weak stream, inability to urinate, or loss of bladder control.³ Complications can include urinary tract infections, bladder stones, and chronic kidney problems.²² Medical therapy and surgery are used as treatment.

CONCLUSION

This is to specify the presence of more than one symptom in a patient may suggest presence of multiple diseases. in this triad of cholelithiasis, ventral hernia and uterine fibroid or benign prostatic hypertrophy pathogenesis is unknown, but may be due to combination of factors such as age, obesity, constipation, congenital weakness, previous surgeries and others.

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