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Original Research Article

Timings and presentation profile of adult inguinal hernias at a district hospital set up in central India

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ABSTRACT

Background: Present study outlines experiences related to inguinal hernia presentation at a district hospital set up with respect to duration of time, mode of presentation and an effort have been made to analyse factors influencing them.
Methods: Descriptive, epidemiological, prospective type of study design was adopted. Adult patients above 20 years presenting with inguinal hernia at District Hospital Sehore, Madhya Pradesh, India, were included in study; considering inclusion and exclusion criteria. Time frame of present study was from April 2017 to April 2018. Under proper written consent relevant data was collected on a pro-forma. Variables obtained were statistically analysed and magnitude of problem estimated on the background of available literature.
Results: 80 patients were enrolled in the study with mean age of 39.64±09.59 years. Majority were men (98.75%) and farming was main occupation (51.25%). Main complaint was lump above the inguinal crease with pain. Increased pain in lump was the main cause of presentation (100%). Predominance of right sided hernia was noted (60%). Almost 36 patients (45%) were admitted with features of obstruction. Lack of awareness of the disease (41.25%) was commonest reason for late presentation. The most common operative procedure done was Lichtenstein's hernioplasty.
Conclusions: There is a need for health education and awareness among common masses especially from rural sector regarding inguinal hernia as a treatable surgical entity which can become life threatning when entity becomes complicated. Counselling regarding government funded schemes like Ayushman Bharat to be done at grass root level. Primary and community health centres need up gradation with availability of full time surgical expertise.

Keywords: Lichtenstein's hernioplasty, Epidemiology, Inguinal hernia, Ayushman Bharat

INTRODUCTION

Word hernia is derived from the Greek word meaning "to offshoot or to bulge".[1] It is defined as an abnormal protrusion of the part or whole of a viscus through the wall of cavity which is meant to contain it.[1] Groin hernias constitute a major presentation among the abdominal wall hernias. Rutkow, in 1996 compiled the information of large series from the National Hospital Discharge Survey (NHDS) and the National Survey of Ambulatory Surgery (NSAS) in United States and found 65.6% incidence rate of inguinal hernia among all abdominal wall hernias.[2] Primatesta and colleagues from the Department of Public Health and Primary Care of Oxford University; in their study of 30,000 operated hernias found that the lifetime risk for acquiring an inguinal hernia in men was 27% compared to 3% in women.[3] Once hernia is acquired important factors which are going to influence its surgical

outcome are its time and mode of presentation. Most groin hernias in high income group countries are treated prior to development of complications but same scenario is not seen in low middle income group countries. In a prospective study conducted by Koch and others on 6,895 patients from Swedish Hernia Register, only 5 percent of groin hernia surgeries were done on emergency basis.[4] In contrast study by Ohene-Yeboah and others showed that about two third of inguinal hernia surgeries at Kumasi, Ghana were posted as emergency.[5] Similar interpretations were drawn by Mabula and Chalya in their study from Bugando Medical Centre in Tanzania.[6] Two entirely opposite scenarios can be seen. Data suggest that emergency hernia surgeries increases postoperative complication rates even mortality can reach up to 5% in elderly patients.[7] There are limited studies from central India which have focussed over timings and presentation profile of inguinal hernias in a District hospital set up. So a study was planned to analyse mode and time of presentation of inguinal hernias in a district hospital which is often a first place where specialist surgical services are present in India.[8,9]

Aims and objectives

In this study we have attempted to sum up systematically our experience related to inguinal hernias in terms of their mode of presentations, time duration for presentation and have tried to analyse factors influencing timings and presentation profile in a District hospital set up in central India from data obtained.

METHODS

Study design and setting

This descriptive epidemiological, prospective study was conducted at Sehore District Hospital Madhya Pradesh India. The time frame for study was from April 2017 to April 2018.

Subjects and methods

Present study included all patients above 20 years of age admitted to surgery ward with presentation of inguinal hernia excluding cases of recurrence and those who refused to participate in study. Clinical examination comprised of eliciting cough impulse, deep ring occlusion test, and position of sac in relation to pubic tubercle which was done by surgeon attending the patient. Examination was done both in standing and supine position. Complicated hernias were posted for emergency surgery and uncomplicated cases were kept for planned surgery after proper preoperative evaluation and treating precipitating pathologies, which needed prior treatment. Detailed history regarding age, occupation and socioeconomic status of patient, duration of symptoms, causes for delayed presentation, reasons which compelled patient to seek surgical opinion regarding his pathology were noted on a pro forma. Final data obtained was analysed statistically and possible intervention that could improve rate of early presentation were suggested. Detailed written consent was provided to patients before including their name in study. Ethical clearance was obtained from institutional ethical committee. Values obtained were statistical analyzed. Mean, median, standard deviation and range were used for expressing numerical data. Parametric continuous variables were evaluated by independent sample t tests and chi-square test was used for categorical variables. P value of less than 0.05 was considered statistically significant.

RESULTS

Present study enrolled 80 patients as per inclusion criteria among them 98.75% (n=79) were males and only 1 patients was female whose age at presentation as 22.5 years. Mean age at presentation of study population was 39.64±9.59 years. Mean duration of complaints at the time of presentation was 5.6±2.3 years. Occupation wise majority were farmers [n=41 (51.25%)], manual labourers [n=27 (33.75%)], loading truck drivers [n=6 (7.5%)], rest 6 (7.5%) office workers, shopkeepers, businessmen, students. Most of them were educated up to 5th class [n=34 (42.5%)], [n=18 (22.50%)] were educated up to 10th class, [n=22 (27.50%)] were graduates and rest [n=6 (7.50%)] were uneducated (Table 1).

Table 1: Socio -demographic characteristics of the study population.

Variables		N	
Age (mean±standard deviation) years		39.64±09.59	
Family income [median (range)] INR		7500 (3000-32000)	
		N	**%**
Sex	Male	79	98.75
	Female	01	01.25
Occupation	Manual labourers	27	33.75
	Farmers	41	51.25
	Drivers	06	07.50
	Others	06	07.50
Education	Uneducated	06	07.50
	Class 5	34	42.50
	High school	18	22.50
	Graduates	22	27.50

About 61.25 percent (n=49) were admitted from outpatient department and rest 38.75% (n=31) were admitted as emergency cases presenting with complicated hernia. Clinical presentation was history of bulge above the inguinal crease in 100% of patients which increases on straining except 36 (45%) patients which presented with obstructed hernia among them at the time of presentation main complaint was inguinal swelling which have become persistent with pain, out of these 17 patients (21.25%) were also having of inability to pass motion

/flatus, vomiting, abdominal distension since swelling became persistent. Over all main complaint which prompted patients to attend surgical clinic was pain in inguinal bulge which have increased in recent past (100%) (Table 2). Indirect sac was present in 66.25% (n=53) patients while 33.75% (n=27) patients have direct sac. I

ncidence of right sided inguinal hernia was more [n=48 (60%)] (Table 3).

Most common associated pathology was chronic cough 56.25% (n=45), constipation in 25% (n=20), benign prostatic hyperplasia (prostate size more than 40 grams) was noted in 12.5% (n=10) of patients (Table 4).

Table 2: Presenting complaints.

Variables			N	%
Presence of pain			80	100
Duration of pain (years)	Mean±SD	05.60±2.3		
	Median(range)	3.26 (2.64-8.94)		
Duration of sudden increase in pain (days)	Mean±SD	01±0.56		
	Median (range)	1.2 (1.1-2.8)		
Presence of lump above the groin crease	present		80	100
	Not present		0	0
Duration of lump (years)	Mean±SD	05.60±2.3		
	Median (range)	7.56 (3.1-11.8)		
Features of obstruction	Sudden increase in pain		36	45
	vomiting		17	21.25
	Not able to pass motions and flatus		17	21.25
	Abdominal distension		17	21.25

Table 3: Clinical examination findings in study population.

Variables		N	%
Body mass index (mean±standard deviation)	25.48±6.23		
Side of hernia	Right	48	60.00
	Left	30	37.50
	Bilateral	02	02.50
Type of hernia	Complete (inguinoscrotal)	72	90.00
	Incomplete	08	10.00
	Direct	27	33.75
	Indirect	53	66.25
	Both (pantaloon)	0	0
Occurrence of hernia	Primary	80	100
	Recurrence	0	0
Cough impulse	Present	44	55
	Absent	36	45
Reducibility of swelling	Reducible	44	55
	Irreducible	36	45
tenderness	Present	36	45
	Absent	44	55

Table 4: Associated co–morbidities.

Variables	N	%
History of COPD/chronic cough	45	56.25
History of chronic constipation	20	25
History of benign prostatic hyperplasia	10	12.5
History of diabetes mellitus	12	15
History of hypertension	17	21.25
History of cardiovascular disease	05	6.25
History of frequent urinary tract infections	12	15

Table 5: Personal and operative history.

Variables	N	%
Smoking/tobacco use	54	67.50
Alcoholism	23	28.75
Positive family history	12	15
History of appendicectomy	4	5
History of prostatectomy	4	5

Table 6: Reasons for late presentation to hospital.

Variables	N	%
Economic reasons	6	7.5
Ignorance/lack of awareness of disease	33	41.25
No nearby surgical facility	10	12.5
Afraid of surgery and have faith on traditional healers	12	15
Social-cultural	1	1.25
Think that hernia is not a life threatening disease	18	22.5

Table 7: Operative details of the patients.

Variables		N	%
Type of operation	Elective	44	55
	Emergency	36	45
Type of anaesthesia	Local	2	2.5
	Spinal	77	96.25
	General	1	1.25
Surgical procedure	Lichenstein hernioplasty	79	98.75
	Resection anastomosis	1	1.25
	Orchidectomy	1	1.25
Hernial sac	Direct	27	33.75
	Indirect	53	66.25
	Both(pantaloon)	0	0
Contents of sac	Small bowel	16	20
	Large bowel	1	1.25
	omentum	19	23.75
	Gangrenous bowel	1	1.25
Postoperative complications (during hospital stay)	Surgical site infection Requiring mesh removal	0	0
	Superficial surgical site infection limited to skin and sub cutaneous tissue	2	2.5
	Haematoma	0	0
	Seroma	12	15
	Fever	4	5
	Faecal fistula	0	0
	Recurrence	0	0
	Death	0	0
Duration of postoperative stay (days)	Mean±standard deviation	4.05±1.79	
	Median(range)	3.68 (3.27-6.46)	

Positive history of tobacco addiction was found in 55% (n=44) of patients (Table 5).

In present study 41.25% (n=33) of patients presented late due ignorance and lack of awareness related to disease.

About 22.50% (n=18) have a belief that hernia is not a life threatening disease so they were reluctant to take treatment. Rest 15% (n=12) were reluctant to get operated as they were either afraid of surgery or have firm belief on traditional healers, about 10 (12.5%)

patients said that there was no nearby health facility with surgical expertise other 7.5% (n=6) were having economic reasons for delayed presentation. Only female patient in present study reported late as there was no pain in the swelling initially and she was also reluctant to discuss this issue to family member due to social reasons (Table 6).

Operative procedure was done in all 80 patients. Lichtenstein hernioplasty was done in 79 patients except in one patient where resection anastomosis was done with orchidectomy where obstructed hernial sac contained bowel loops with doubtful viability even after hot fomentation and testis also showed gangrenous changes. Postoperatively four patients (5%) had fever, 12 (15%) developed seroma and 2 (2.5%) had wound infection which was limited to superficial layers and was managed by opening few stitches and adding culture sensitive antibiotics. There were no other postoperative complications or death seen. The mean duration of hospital stay was 4.05±1.79 days (Table 7).

DISCUSSION

Present study showed that reported hernia cases were maximum males (98.75%) which is in accordance with available literature which suggest high incidence among males El-Qaderi et al, Kurzer et al.[10,11] This difference in frequency of occurrence in males and females may be due to anatomical difference in the bony pelvis, the musculo fascial layers of the lower abdomen and the descent of the gonads from the retroperitoneum.[12] Primatesta and colleagues reported that the lifetime risk for acquiring an inguinal hernia in men was 27%, while for women it was only 3% means a proportion of 9 is to 1; which implies that among 80 hernia cases approximately 8 cases should be of female sex however in our study this proportion is much lower with only one female hernia case; reason may be social, cultural dynamics and high incidence gender inequality in India particularly in rural and poverty laden areas where females tend to seek medical care quite late.[3,13] Median time for presence of reducible groin lump in present study was 7.56 years (range 3.1-11.8 years), comparable results were obtained by Mabula and Chalya from Tanzania.[6] Sanders and others in a study on Ghanaian hernia cohort reported that 16 percent of hernia patients were unable to work, and 64 percent reported limited daily activity.[14] If we consider this morbidity and prevalence rate of 4.6% as estimated by Ia-son then approximately a figure of 5.44 crore people with inguinal hernia in India comes to picture which are either are unable to work or work to limited extent due to Inguinal hernia.[15] Murray et al estimated 11 DALY (Disability adjusted life years) lost per 100,000 population per year in Global Burden of Disease study 2010 (referred to as GBD 2010).[16] Present study showed 38.56% patients presented with complicated hernias, which needed emergency surgery; comparable results were obtained by Ohene-Yeboah et al and Mabula and chalya in their studies.[5,6] complicated hernias not only increases chances of mortality among patients even financial burden of treatment increases several times.[17,18] Regarding causes of late presentation 41.25% said that they were not aware of disease and 22.5% believe that disease was not dangerous to health if we correlate these results with literacy rate in study population which was; approximately 50% of patients were either uneducated or have received education till class 5, a strong correlation can be established between level of education and delayed presentation. Low level of education is directly or indirectly related to low socio-economic status of patient. Effect of these two factors is augmented by a third important factor which have led to delayed presentation in 12.5% of present study population which is, in-accessibility of health care facility especially with surgical expertise nearby. The challenge for hernia surgery in India is to integrate the organizational structure of surgical care into easy accessible healthcare system. Presently our health care system has variation in the range of services offered between hospitals within same District. Majority of our community health centres and almost all of our primary health centres don't have a full time practising surgeon.[8,9] Third important factor which have led to delayed presentation was fear of cost of surgery, here we would like to add that this factor will always be there in low middle income group countries however government sponsored programmes like Ayushman Bharat would definitely one day vanish fear of cost of surgery from minds of people; need is there to make people aware of these programmes.[19] Regarding issue of co morbid conditions precipitating hernia; they can only be minimized by health education.

CONCLUSION

We can conclude that time and mode of presentation profile of groin hernias in central India is not better than other low middle income group countries and there is a need of awareness by means of health education especially by teaching and training of local health care providers to enhance detection rate of groin hernias and thus minimizing delay in treatment and associated morbidity.

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