Esophageal and Gastric Cancers in Hadhramout

Abdullah Saleh Bin Nabhan[1], Rasheed Mohammed Bamekhlah[1], NabeelSalim Musaiaan[2], Husain Alghasali[2] and Faozia Faraj Bamatraf[3]

[1]Department of Medicine, College of Medicine and Health Sciences, Hadhramout University.
[2]Department of Family Medicine, College of Medicine and Health Sciences, Hadhramout University.
[3]Department of Community Medicine, College of Medicine and Health Sciences, Hadhramout University.

Abstract:

Objectives: This study was done to know trends and characteristics of Esophageal cancers (EC) and Gastric cancers (GC) in Hadhramout.

Subjects & methods: A retrospective descriptive study for all registered cancers in Hadhramout National Cancer (HNOC) between 2002-2012 looking for EC & GC with regard to age, sex, residency and histopathological diagnosis. Clinical presentation were analyzed for cases between 2006-2012.

Results: the total registered cancer cases were 2988, out of them 447(16%) cases were digestive cancers , EC cases were 40,out of them 24 (60%) were males, while GC were 88 cases ,out of them 54 were males (61.4%). Both EC and GC were more common in ages ≥70 years. From Hadhramout Coast there were 67.5% of EC and 61.4% of GC, from HadhramoutValey 15% of EC and 29.5% of GC, and the rest of cases were from other areas. Squamous cell carcinoma was the most common in EC and adenocarcinoma in GC. Dysphagia was the most common presentation in EC, while epigastric pain in GC.

Conclusion: Squamous cell carcinoma was the most common in EC and adenocarcinoma in GC, both cancers were more in elderly and in males. Further studies are needed to address the community-related risk factors.

Keywords: Cancer, esophagus, stomach, Hadhramout.

Corresponding author : Abdullah Saleh Bin Nabhan[1]

1. Department of Medicine, College of Medicine and Health Sciences, Hadhramout University.
2. Department of Family Medicine, College of Medicine and Health Sciences, Hadhramout University
3. Department of Community Medicine, College of Medicine and Health Sciences, Hadhramout University.

اورام المريء والمعدة في حضرموت

عبدالله صالح بن نبهان[1] رشيد محمد بامخلاه[1]
نبيل سالم مسيعان[2] فوزية فرج بامطرف[3]
[1]قسم الباطنة كلية الطب والعلوم الصحية جامعة حضرموت
[2] قسم طب الاسرة كلية الطب والعلوم الصحية جامعة حضرموت
[3]قسم طب المجتمع كلية الطب والعلوم الصحية جامعة حضرموت

الملخص :

تعتبر الاورام احد اهم المشكلات الصحيه في العالم حيث إن اورام المريء تشكل المرتبة الثامنة واورام المعدة المرتبة الرابعة من بين الأورام في العالم وتهدف هذه الدراسة الى معرفة اتجاهات وخصائص اورام المريء والمعدة في حضرموت.

حيث تمت دراسة كل حالات اورام المريء والمعدة المسجلة في المركز الوطني للأورام بحضرموت بين عامي ٢٠٠٢-٢٠١٢م.

عدد الحالات المسجلة في المركز خلال هذه الفتره كانت ٢٩٨٨ حالة منها ٤٧٧ (١٦٪) حالات الجهاز الهضمي.

عدد حالات سرطان المريء كانت ٤٠ حالة منها ٢٤ (٦٠٪) ذكور وسرطان المعدة ٨٨ حالة منها ٥٤ (٦١,٤٪) ذكور.

كبار السن (≤٧٠ عام) هم الاكثر عرضة لكلا النوعين من الاورام ، الحالات التي تسكن ساحل حضرموت شكلت ٦٧٪ من حالات اورام المريء و ٦١,٤٪ من اورام المعدة ، ومن وادي حضرموت ١٥٪ و ٢٩,٥٪ على التوالي ، والحالات المتبقية من مناطق اخرى.

ورم الخلية الحرشفية هي الاكثر حدوثا بين سرطانات المريء بينما الورم الغدي بين حالات اورام المعدة.

صعوبة البلع هو اكثر الاعراض في اورام المريء بينما الألم الشرسوفي في اورام المعدة.

إن هناك حاجه لدراسات مستقبلية لمعرفة عوامل الخطوره للاصابة بهذه الاورام في المجتمع وبرنامج استكشاف الزامي.

Introduction:

Inguinal hernia repair, is a frequent operation performed by the general surgeon worldwide (1, 2). Numerous methods have been described over the years to try to improve on the hernia surgery. Conventional issue repair is associated with undue tension at the suture line, which leads to a higher rate of recurrence, up to 15% in most series (3, 4, 5). Mesh repair, is promising (6, 7), but most studies were either: retrospective, case series, small sample size, or short follow-up (8-11). Over all, in Yemen, and Arab States, tissue sutured repair is still practised by many surgeons due to fair of infection, inexperience and high cost of mesh . Mesh repair is restricted mainly to huge or recurrent hernias (12). The aim of this study is to clinically evaluate the outcomes of low-weight polypropylene mesh, and conventional repairs, in primary inguinal hernias in the hands of general surgeons.

Patients and Methods:

This is a prospective randomized controlled study, carried out on 403 patients having primary inguinal hernias, admitted at Ibn Sina Central Teaching hospital, Yemen, between October 2010 and October 2013. The patients were randomly allocated to either. Modified Lichtenstein (13) , or conventional M. Bassini (14) repairs , after stratification of risk factors of hernia recurrence.

The inclusions were: any patient above 18 years who presented with clinically diagnosed primary inguinal hernia, fit to receive spinal or general anaesthesia, and gave informed consent,. Exclusions were previous hernia repair, American Society of Anaesthesia score 1Vor V, emergency operation, and severe local or systemic infection. The study protocol was approved by the Ethical and Research Committees of the Faculty of Medicine, University of Hadhramout. Furthermore the study was explained to the patients in details, who gave an informed consent for participation.

The participating Surgeons were classified according to the years of experience into three levels: Level 1; < 5 years, Level 11; 5-12 years, and Level 111; more than 12 years. The out-come measures were hernia recurrence, technical difficulty, post-operative pain, analgesia required, length of hospital stay, intra-operative and post-operative complications, , time of return to usual normal activities, and patient's satisfaction to surgery. The operated patients were assessed at 2, 4, and 12 weeks, and 1, 2, 3 years after surgery.

Spinal anaesthesia has been chosen as the method of choice. All patients received I/V single dose of prophylactic ceftriaxone I gram pre-operatively at the induction of anaesthesia.

The M. Lichtenstein Technique:

Through the classical inguinal incision, the hernial sac was dealt with as usually. The plane between the external oblique aponeurosis and conjoint tendon was opened up as widely as possible. A polypropylene mesh (Prolene, Dyna-Mesh,Germany) measuring 8cm.x15cm, trimmed to fit this space. The inferio-medial corner of the mesh was fixed to the anterior rectus sheath where it is inserted into the pubic bone, not less than 2cm. medial to the pubic tubercle. The lateral edge of the mesh was sutured to the inguinal ligament using loose, continuous, 3/o Nylon suture. A slit was made on the lateral end of the mesh for 6 cm. creating two tails – 2/3 above, 1/3 below to accommodate the cord. The upper tail was then placed superficial and sutured to the inguinal ligament with one or two interrupted sutures. Three or four sutures were used to fix the mesh superiorly. Care was taken to keep the mesh slightly relaxed, to compensate for increased intra-abdominal pressure when the patient stands up from the recumbent position, and to compensate for the future shrinkage of the mesh.

Table 1: The characteristics of patients with inguinal hernias according to allocated method of repair.

Characteristics	Type of repair	
	M.Bassin (n = 201)	M Lichtenstein (n202)
Sex – n. (%)		
Male	182 (90.5%)	18 4 (91.1%)
Female	19 (9.5 %)	18 (8.9%)
Age – (yrs.) mean±sd.	50.3 ± 15.6	49.5 ± 15.5
BMI mean±sd.	24.0 ± 8.4	23.5 ± 4.8
Clinical presentation:		
Preop.swelling	196 (97.5%)	201 (99. 5%)
Duration of hernia	47.9 ± 43.1 months	54.2 ± 37.9 months
External diameter	6.28 ± 1.75 cm.	6.41± 2.11 cm.
Preoperative pain	55 (27.4%)	60 (29.7%)
Irreducibility	16 (8.0 %)	19 (9.4 %)
Type of hernia		
Direct	96 (47.8%)	94 (46 5%)
Indirect	105 (52.2%)	108 (53.5%)
Side of hernia:		
Right	129 (64.2%)	132 (63.4%)
Left	60 (29.8%)	57 (28.2%)
Bilateral	12 (6.0 %)	13 (6.4 %)
Pre-op. risk factors		
Chronic constipation	27 (13.4%)	29 (14.4%)
Chronic cough	27 (13.4%)	30 (14.9%)
Prostatism	22 (10.9%)	22 (10.9%)
Diabetes mellitus	18 (8.9 %)	16 (7.9 %)
Bronchial asthma	13 (6.5 %)	13 (6.5 %)
Smoking	116 (57.7%)	110 (54.5%)
Steroid use	11 (5.5 %)	13 (6.4 %)
Heavy manual activity	73 (36.3%)	79 (39.1%)
Under weight	25 (12.4%)	27 (13.4%)
Obesity	19 (9.5 %)	21 (10.4%)
Urethral stricture	1 (0.5 %)	2 (1.0 %)

Plus – minus values are means ± standard deviation. . BMI: denotes Body Mass Index

Data Analysis:

All data were analyzed using SPSS for windows program, version 14 (SPSS Inc., Chicago, IL) Analyses of the differences between continuous, normally distributed data were expressed as means ± s.d., using two-tailed t- test. Categorical data were compared with the use of Chi-square test. The cumulative percentage of patients with recurrence over time was calculated with Kaplan-Meier curve and compared with log-rank test. Pain score for the two groups of repair at different intervals, was compared with the use of an analysis of variance. Multivariate analysis of various factors of hernia recurrence was performed by using Cox regression test.

Result:

The demographic characteristics of patients and hernias & the prognostic factors of hernia recurrence were comparable in the two groups of repair. (Table 1). The 3-year cumulative rate of recurrence was 1.5 % (n=3) for patients who underwent. L. mesh-repair, and 10.5% (n=21) for those who underwent conventional-repair. The difference was statistically significant (p<0.001 by log rank test) (Fig. 1).

The results of multivariate analysis, of the prognostic factors of hernia recurrence, identified conventional repair (p=0.001), junior surgeon (p=0.001), and wound infection (p=0.01) as independent predictors for inguinal hernia recurrence (Table 2).

The relative hernia recurrence, of each level of surgeons, in the tissue and mesh repairs of inguinal hernias is illustrated in Figure 2 . With Level 1 surgeons, the recurrence rate was 6.5% in the tissue repair group, and 1% in the mesh group, while with L 111, it was 1.5% in the sutured group and 0.5% in the mesh group%. The difference is statistically significant. Furthermore, with L11 the recurrence rate is 2.5% in the sutured group, and 0.5% in the mesh group, indicating recurrence rate is high with the young surgeons, and tends to fall with the years of experience.

Pain score after surgical repair, seemed to be significantly greater in the conventional group, than in the mesh group. The difference was statistically significant, (p< 0.001((Figure 3). The proportions of patients who required pethidine injection in the mesh group was 20.3% compared with 51.2% in the sutured group, p<0.001(Table3). Similarly the proportions of patients who required oral analgesia (50 mg diclophenac Na tab.) in the mesh and sutured repair groups were 36.6% and 68.6% respectively. The mean duration of analgesic use was 1.18 weeks for the sutured group comparable with 0.5 week for the mesh group p <0.001. The time to return to normal activities, was significantly shorter in the mesh group (16.2 ± 8.3 days) as compared to the sutured group (20.8 ± 11.3 days), which was statistically significant, p<0.001 (Table 4). Overall, at three month-visit, the patients who had mesh repair were significantly more satisfied with the procedure (94.5%) than those who had sutured repair (60.7%), p<0.001. Finally, the mean operative time (45.6±10.9min. vs. 43.1± 10.8min.), hospital stay (1.9± 0.80 vs. 2.09±0.78), and complications were comparable in both groups, except, chronic post-operative pain was significantly greater in the tissue repair group than in the mesh group, (4% vs.12.4%, p<0.001 ((Table 5).

Fig. 1: Kaplan-Meier Curves for non-recurrence of hernia after repair of primary inguinal hernias according to whether the patient was assigned to conventional repair (n=201) or mesh repair (n=202).

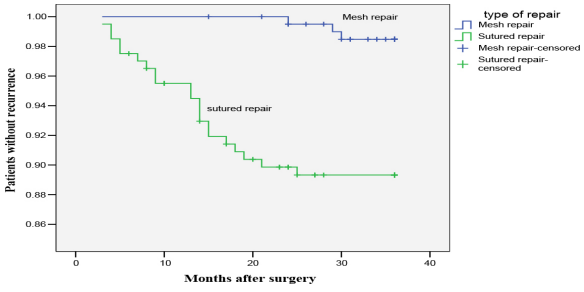

Table 2: Multivariate analysis of prognostic factors for recurrence in inguinal hernia repairs.

Variables	P value	HR**	95% CI■ of HR
Tissue repair	0.001	7.32	2.63 – 16.24
Junior surgeon	0.001	4.4	3.15 – 5.18
Wound infection	0.01	3. 11	2.9–24.7
HR**: Hazard ratio. 95% CI■: 95 percent confidence interval. Multivariate analysis was performed by Cox- regression test.			

Fig. 2: Relative hernia recurrence of each level (surgeon experience) in the sutured and mesh repairs of inguinal hernias.

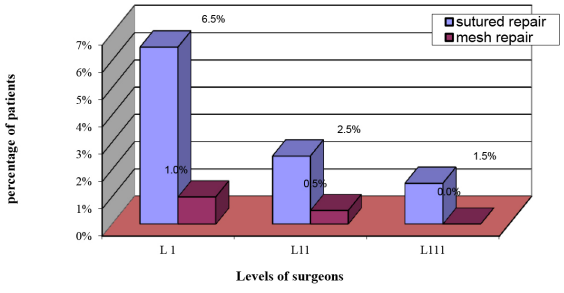

Fig. 3: Pain score following patients with inguinal herniorraphy with either suture or mesh.

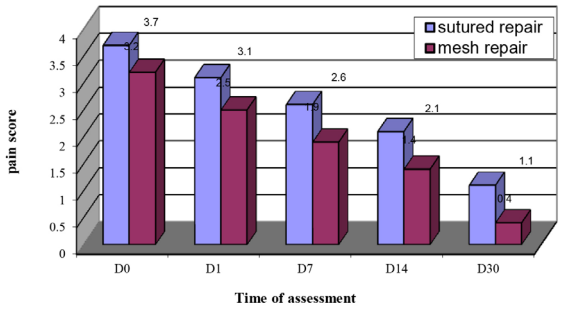

Table 3: Types and frequency of Parenteral analgesics used by sutured and mesh repairs of inguinal hernia.

Type of analgesia	Type of repair		P* value
	suture	mesh	
narcotics (pethidine)	**103 (51.2%)**	**41 (20.3%)**	<0.001
Single dose	73 (36.3 %)	36 (17.8%)	
Double dose	30 (14.9 %)	5 (2.5 %)	
non-narcotics (Diclophenac)	**85 (42.3 %)**	**92 (45.5%)**	0.1
Single dose	47 (23.4%)	63 (31.1%)	
Double dose	38 (18.9%)	29 (14.4%)	
Total analgesics consumed	**188 (93.5 %)**	**133 (65.8%)**	<0.001
Values in parenthesis are percentages of patients Mean consumption : 0.9 vs. 0.5 inj., p < 0.001			

Table 4: Postoperative hospital stay and convalescence in the two treatment groups of inguinal hernias

Variable	Type of repair		P* value
	Sutured Repair (n= 201)	Mesh Repair (n=202)	
Postoperative hospital stay (days)	2.09± 0.78	1.9± 0.80	0.09
Time to resumption of normal activity (in days)	20.8± 8.3 (18-42days)	16.2± 5.1 (14-36days)	0.001
V Value Parentheses are mean ± standard deviation			

Table 5: Complications in the two treatment groups of inguinal hernia repairs.

Complication	Type of repair		P* value
	Sutured (n=201)	Mesh (n=202)	
Intra-operative	7 (3.5 %)	7 (3.5 %)	
Nerve injury	4 (2.0 %)	6 (3.0 %)	>0.05
Epigastric artery injury	1 (0.5 %)	1 (0.5 %)	>0.05
Vas injury	1 (0.5 %)	0 (0.0 %)	>0.05
Minor bladder injury	1 (0.5 %)	0 (0.0 %)	>0.05
Early postoperative	37 (18.4%)	40 (19.8%)	
Urinary retention	14 (7.0 %)	12 (5.9 %)	>0.05
Haematoma	3 (1.5 %)	2 (1.0 %)	>0.05
Seroma	1 (0.5 %)	2 (1.0%)	>0.05
Wound infection	5 (2.5 %)	6 (3.0%)	>0.05
Local numbness	8 (4.0 %)	10 (5.0 %)	>0.05
Scrotal oedema	4 (2.0 %)	5 (2.5%)	>0.05
Hydrocele	2 (1.0 %)	3 (1.5 %)	>0.05
Late post-operative	34 (16.9%)	18 (8.9 %)	
Testicular atrophy	1 (0.5 %)	0 (0.0 %)	>0.05
Chronic infection	1 (0.5 %)	2 (1.0 %)	>0.05
Chronic groin pain	20 (12.4%)	8 (4.0 %)	<0.05
Chronic constipation	1 (0.5 %)	2 (1.0 %)	>0.05
Persistent numbness	5 (2.5 %)	6 (3.0 %)	>0.05
Intestinal obstruction	1 (0.5 %)	0 (0.0 %)	>0.05
Total	78 (38.8%)	65(32.2%)	>0.05
Values in parenthesis are percentages of patients. P < 0.05 is significant			

Discussion:

Abdominal wall hernia is a common clinical problem treated by the general surgeon today. There is a local defect which has to be closed technically, either by sutures (2,3) or, in modern times, with meshes (7-15) .

It is reported that sutured technique, is still practiced by many surgeons in hospitals all over the developing world (16), because of fear of infection and high cost of mesh. The need to evaluate its safety and efficacy in comparable to conventional repair in our local setup provided the rationale for this ongoing study.

The impact of the type of repair, with or without mesh, on recurrence rate is still an object of debate. In the conventional repair of the present study, the attempt to approximate the conjoined tendon to the inguinal ligament is a cause of unavoidable tension and pulling along the suture line, causing additional pain, prolonged recovery period, and high rates of recurrence (2,3,4) . This high rate of recurrence has been reduced to a minimum (10.5%vs. 1.5%) by adopting tension-free technique with L.W. polypropylene mesh material.

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