

Enterocutaneous Fistula in University of Port Harcourt Teaching Hospital

Dodiya-Manuel A, Igwe PO

Department of Surgery, University of Port Harcourt Teaching Hospital, Port Harcourt

ABSTRACT

INTRODUCTION: Enterocutaneous fistula (ECF) is a distressful problem to the surgeon, patients and relatives. In spite of the medical advances over the years, mortality still remains between 10 and 20%. The objective of this study was to evaluate the management of ECF and its outcome as seen in University of Port Harcourt Teaching Hospital (UPTH).

PATIENTS AND METHODS: This is a retrospective study of all cases of ECF seen and managed in UPTH over an 8 year period. Relevant data were retrieved and analyzed.

RESULTS: Thirty six folders were retrieved and analyzed within the study period. There were 24 females and 12 males. Their ages ranged from 13 to 68 years with the peak age incidence at 51-60 years. The commonest cause was post operative (91.7%) and appendicectomy was the commonest surgical procedure (36.4%). Twenty patients were managed conservatively and 15(75%) had spontaneous closure of their fistulae. Conservative management was satisfactory in most of our patients either alone (93.8%) or conservative followed by surgery (100%) with 1(6.2%) mortality while surgical management had 6 (37.5%) mortalities and 4 (25%) recurrences that were subsequently and successfully managed conservatively. Mortality rate was 19.4%.

CONCLUSION: The commonest cause of ECF is post operative. The modality of treatment should be conservative while surgery be reserved for selected cases.

KEY WORDS: Enterocutaneous fistula, management outcome Port Harcourt.

this leads to fluid and electrolyte derangements and considerable difficulties with skin care. Low output fistula has effluent of less than 500mls in 24 hours. Anatomically, Sitges-Sera et al⁵ classified ECF based on location of fistula which was modified by Schein et al⁶ as follows: type 1 refers to abdominal oesophagus and gastroduodenal fistulae, type 2 refers to small bowel fistula, type 3 refers to large bowel fistula and type 4 refers to fistula at any site but associated with a large abdominal wall defect. The principles of management of ECF include nutritional support, correction of fluid and electrolyte imbalances, recognition and treatment of sepsis, skin care around the fistula and correctly timed surgical procedure where necessary⁷.

In favourable circumstances, 60-70% of fistulae heal spontaneously within 6 weeks of conservative management⁸. If the fistula fails to close within 6 weeks of conservative management, surgical intervention becomes imperative⁹. Other indications for surgical intervention include intra abdominal abscess, distal obstruction, complete disruption of bowel lumen, multiple tracts, intra abdominal malignancy, chronic inflammatory lesions like tuberculosis, crohn's disease, etc, irradiated field and foreign body in the fistula tract⁹. The preferred surgical procedure is complete resection of the bowel segment containing the fistula and end to end anastomosis⁸. Bypass of the fistula may be indicated if resection is hazardous such as in lateral duodenal fistulae and small bowel fistulae deep within the pelvis¹⁰. The objective of this study was to evaluate the management of enterocutaneous fistula and its outcome in University of Port Harcourt Teaching Hospital.

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INTRODUCTION

Enterocutaneous fistula is an abnormal communication between the skin and the gastrointestinal tract. It is a formidable and distressful problem to the surgeon, patients and relatives. In spite of the significant medical advances over the years, the mortality still remains between 10 and 20%¹. The commonest cause of ECF is post operative (iatrogenic) in over 80% of cases while the other causes include inflammatory bowel diseases, malignant diseases, trauma, irradiation^{2,3}.

The classification of ECF may be physiological (based on the output over 24 hours) or anatomical⁴. In high output fistula, the output is over 500mls in 24 hours and

PATIENTS AND METHODS

This is a retrospective study of all cases of enterocutaneous fistula seen and managed at the University of Port Harcourt Teaching Hospital over an 8 year period (1st January 2004 to 31st December 2011). Relevant data from the case notes which included age, sex, aetiology, clinical findings, treatment and outcome were retrieved and analyzed. Three patients were excluded from this study because of inadequate or incomplete information.

RESULTS

Out of the 42 cases of ECF within the study period, only 36 case notes could be retrieved and subsequently analyzed. There were 12 males (33.3%) and 24 females

(66.7%) giving a male/female ratio of 1:2. Their ages ranged from 13 to 68 with peak age incidence of 51-60 years (table 1).

Table 1: Age Distribution

Age range	Number of Patients	Percentage
11 - 20	4	11.1
21 - 30	2	5.6
31 - 40	2	5.6
41 - 50	4	11.1
51 - 60	14	38.9
61 - 70	10	27.7
71 - 80	0	0

Thirty three cases (91.7%) occurred following surgery. The surgical procedures and their frequencies are as listed in table 2.

The average time of onset of fistula after surgery was 8.7±2.1 days. Appendicectomy was the commonest surgical procedure and this occurred in 12 patients (36.4%). The remaining 3 cases (8.3%) occurred following penetrating abdominal injuries. The commonest site of ECF was the colon, seen in 20 cases (55.6%). Other sites involved are as listed in table 3.

Twenty patients (55.6%) had low output fistula while 16 patients (44.4%) had high output fistula. Twenty patients (55.6%) were managed conservatively. Fifteen (75%)

Table 2 : Surgical procedures

Surgical Procedures	No of patients	Percentage
Total abdominal hysterectomy	2	6.1
Hemicolectomy for carcinoma of the colon	5	15.1
Appendicectomy	12	36.4
Herniorraphy	4	12.1
Ovarian cystectomy	2	6.1
Repair of perforated duodenal ulcer	2	6.1
Repairs of typhoid perforation	6	18.1

Table 3: Classification of fistula according to site

Site	Number of patients	Percentage
Type 1	2	5.6
Type 2	11	30.5
Type 3	20	55.6
Type 4	3	8.3

Table 4: Treatment outcomes of conservative and surgical management of enterocutaneous fistula.

Treatment	Number of patients (%)	Satisfactory (%)	Mortality (%)
Conservative alone	16 (44.4%)	15 (93.8%)	1 (6.2%)
Surgery alone	10 (27.8%)	6 (60%)	4 (40%)
Conservative then surgery	4 (11.1%)	4 (100%)	0 (0%)
Surgery then conservative	6 (16.7%)	4 (66.7%)	2 (33.3%)

had their fistulae close spontaneously, 1(5%) died during resuscitation period and 4(20%) of the patients had surgery due to non closure of their fistulae after 6 weeks of conservative management. Out of the 16 patients who had early operative intervention, 6(37.5%) died, 6(37.5%) had satisfactory healing of their fistulae after surgery while 4(25%) had recurrence of their fistulae after surgery and were subsequently and successfully managed conservatively.

Those that were managed conservatively had an average hospital stay of 4.6±1.2 weeks while those that had early surgical intervention had an average hospital stay of 2.6±1.3 weeks.

Conservative management included high protein and high calorie diet e.g. milk drinks like complain, caselan, fluid drinks like pap and custard, eggs, crayfish, meat, etc. Astymin which is an amino acid supplement were given intravenously to some of the patients. Other conservative measures included correction of fluid and electrolyte imbalance and their maintenance, control of sepsis using intravenous broad spectrum antibiotics and appropriate skin care; colostomy bags were put in place around the fistula to collect the fecal effluent while zinc oxide and/or Vaseline applied on the skin around the fistula.

Surgery done included exploratory laparotomy, resection of the diseased part and anastomosis of healthy segments of gut.

Seven patients died giving a mortality rate of 19.4%.

DISCUSSION

Enterocutaneous fistula is a devastating condition for the patients and their families. In spite of the advances in medicine, ECF still causes considerable morbidity and mortality¹¹.

In our series, iatrogenic (post operative) causes are the commonest cause of ECF accounting for 91.7% of cases and this is in agreement with other reports^{2,3,12}. Four cases occurred following herniorrhaphy for Richter's type obstructed hernia. This occurred as a result of inadvertently catching a loop of bowel with stitch while closing the abdomen. This can be avoided by spreading the omentum over the loops of bowel before closing the abdomen¹⁰. Appendicectomy was the commonest post operative cause in this series (36.4%) and this was similar to a report from Maiduguri¹³. Probably this is due to the fact that most appendicectomies in this environment are done by younger resident doctors in tertiary hospitals and untrained medical personnel in

peripheral hospitals. In our study, 4 (33.3%) of these appendicectomies were done by younger resident doctors while 8 (66.7%) by doctors in peripheral hospitals who referred the patients after the development of ECF.

The three cases of penetrating abdominal injuries from gunshot (8.3%) causing ECF in this series reflect the increased level of militant activities within the Niger Delta sub region.

Radiation enteritis, crohn's disease, ulcerative colitis, diverticular disease as causes of ECF are rare diseases in our environment.

Most of our patients were referred from peripheral hospitals. This reveals the level of incompetence and poor surgical practice in this environment because most of the doctors in these hospitals are general practitioners with limited surgical experience. The finding of 51-60 years as the peak age incidence for ECF in our study is worth mentioning. This could be explained by the fact that acute appendicitis was most commonly seen in in the 11-20 year age range but ECF resulting from appendicectomy was commoner in the 51-60 year range. There was no identifiable reason for this observation. Furthermore, some other surgical procedures like hemi colectomy for carcinoma of the colon and total abdominal hysterectomy were seen in the 51-60 year age group.

Fifteen (93.8%) out of the 16 patients treated conservatively had spontaneous closure of their fistulae. This finding is in agreement with other studies^{9, 14, 15} describing high rate of spontaneous closure of ECF in patients on conservative management. It has been documented that the control of sepsis is the most important determinant of outcome in patients with ECF¹⁶. Most deaths are due to uncontrolled intra abdominal sepsis that leads to increase catabolism, ongoing nutritional loss, impaired immune function and eventual inability of fistula to close spontaneously. In this series, 3 of the patients came with peritonitis and had early surgical intervention but died post operatively. High protein and high calorie diet was the principal form of our nutritional management. We maintained this form of management even in high output fistula because of unavailability of parenteral nutrition which is the bedrock of nutritional support of high output fistula in developed countries¹⁷. Levy et al¹⁸ successfully treated high output fistula in their series with enteral feeding only and had excellent results. However, it has been noted that duodenal and proximal jejunal fistulae are not suitable for this type of feeding⁹. Out of the cases that died in our series, 2 had type 1 fistula and 4 had type 2 fistula. This stresses the need for the availability of parenteral nutrition in our environment. Though an

amino acid supplement formulation, astymin, given intravenously has been developed by our local pharmaceutical industries and was used in our patients, a prospective controlled trial is necessary to determine its usefulness. Fortunately, most ECFs in our environment involve the distal ileum and below¹⁹. This was seen in our study where majority of the ECFs were at the colon and terminal ileum. Though the use of octreotide is controversial²⁰, we did not use it in our patients because of its unavailability.

Skin care is an important component of the management pathway. The effluent which may be acidic or alkaline causes skin excoriation. It also contains enzymes that may digest the abdominal wall leading to maceration. Colostomy bags were applied to collect the fecal effluent and with the help of our nurses, zinc oxide paste or Vaseline applied on the skin around the fistula was effective in reducing the incidence of skin excoriation. The spontaneous closure rate of the fistulae in those treated conservatively was 75% while 37.5% of those treated surgically had closure of their fistulae with uneventful post operative course. This finding supports the opinion of many workers that immediate surgical correction of ECF is not a treatment priority while nutrition and control of sepsis are the 2 most important aspects of management^{10, 21}. When these are instituted, most fistulae will close on conservative management. The high mortality of 19.4% recorded in this study is attributable to sepsis and absence of total parenteral nutrition in our environment.

CONCLUSION

Post operative (iatrogenic) causes are the commonest cause of enterocutaneous fistula with appendectomy being the commonest in this series. Conservative management should be employed as the initial treatment modality while early surgery is reserved for selected cases.

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Sickness Absence Among Depressed Patients Attending The General Out Patients Department of The Jos University Teaching Hospital, Jos, Nigeria

Goar GS, Moses DA, Micheal TA

Department of Psychiatry Jos University Teaching Hospital Jos

ABSTRACT

Depression has been associated with low productivity and long absence from work. This has a serious consequence for the individuals, the employer and the society. The objectives of this study were to determine sickness absence from work among depressed patients attending General Out Patients Department (GOPD) in the preceding 12 months, to assess socio-demographic correlates of sickness absence in these patients and lastly, to determine the effect of depression on perception of work performance.

METHOD: This was a cross-sectional descriptive study among 200 consecutive patients attending the General Out Patients Department of the Jos University Teaching Hospital from November 2006 to March 2007.

A semi-structured questionnaire designed by the authors was used to collect socio-demographic variables, self-reported perception of work and sickness absence days in the 12 months prior to the study. Depression was assessed using Structured Clinical Interview for DSM-IV (SCID) axis 1 disorder.

RESULTS: A total of 51(25.4%) of the 200 patients met the DSM IV diagnostic criteria for major depression. The depressed respondents significantly had higher mean and cumulative days of sickness absence compared to the non-depressed ($p < 0.0001$). Among the depressed patients male gender ($p < 0.0001$) and younger age (16-45 years) ($p = 0.017$) but not marital status ($p = 0.867$) were associated with sickness absence. Older age ($P = 0.001$) was associated with sickness absence in the non-depressed while gender ($p = 0.117$), and marital status ($p = 0.752$) were not. Having a diagnosis of depression was associated with poor work performance compared with the non-depressed ($p < 0.0001$).

CONCLUSION: Increased efforts are needed to screen and treat for depression to improve productivity and to prevent long spells of sickness absence.

KEY WORDS: sickness absence, depression, socio-demographic variables, work performance.

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INTRODUCTION

Depression is a chronic and recurrent disorder.¹ It is the

most common form of mental disorder in primary health care and in the community.^{2,3} Disability associated with depression is greater than that reported for other chronic physical conditions. It has been found that the functioning of depressed patients is comparable or worse than that of patients with a major chronic disease such as hypertension, diabetes, arthritis and back pain.⁴

Sickness absence with psychiatric disorders is a major public health problem with serious consequences for the individual, the employer and society.⁵ Depression has been found to be related to long absence from work^{6,7}, and to be a significant predictor of work disability.^{8,10} Days lost from work owing to depression has considerable economic burden on family members and the society.¹¹ One study found that depressed employees had 28 times higher risk of absence compared to employees who did not suffer depression.⁸

Furthermore, in a study among USA workforce it was revealed that workers with depression reported significant work absence and reduced performance while at work than those without depression.^{12,13} Major depressive disorder was associated with 27.2 lost work days.

Despite these facts there is a paucity of studies on sickness absence among depressed patients in our environment. Therefore, this study examines sickness absence and socio-demographic correlates among depressed patients attending GOPD of the Jos University Hospital, Jos.

The objectives of the study were:

to determine sickness absence from work among depressed patients attending GOPD in the last 12 months, to assess socio-demographic factors of sickness absence.

and to determine the effect of depression on perception of work performance.

METHODS

This was a cross-sectional descriptive study among 200 consecutive patients attending the general outpatient department (GOPD) of the Jos University Teaching Hospital (JUTH), Jos. Jos is the capital city of Plateau State. It has an estimated population of 822,873 as at 2006 (Plateau State Ministry of Information 2007). JUTH is located at the north central region of Nigeria. The catchment areas are Plateau, Nasarawa, Bauchi,

Benue and Taraba States, and the Federal Capital Territory. It offers both specialist and primary care services to in and out patients. Although the GOPD is situated within the Teaching Hospitals, it offers primary health care services in that a “walk-in” policy operates and no referrals are required before patients are seen. The study was done from November 2006 to March 2007. The sample size was determined using the formula $n = z^2Pq/d^2$. Where n = The desired sample size when the population is more than, 10,000. Z = The standard normal deviation set at $1.962 = 2$, which corresponds to the 95% confidence level. P = The population in the target population estimated to have a particular characteristics i.e. estimate of prevalence of depression in the primary health care 0.1(10%). Q = 1 - P, D = Degree of accuracy desired, which is set at 0.05 (5%). $N = 2^2 \times 0.1 \times (1 - 0.2) / 0.05^2 = 152$. However, 200 persons were recruited and assessed.

The study population was made up of consecutive consenting patients who were 16 years of age and above. Excluded were; patients with alcohol or drug abuse, subjects with any past history of psychiatric disorder other than depression, patients with altered sensorium and those who failed to give consent.

A semi-structured questionnaire designed by the authors was used to collect the socio demographic data, self-reported perception of work performance and sickness absence days in the last 12 months. In the assessment of work performance respondents were asked to rate how satisfied they were with their performance of duty in the last 12 months based on the following options: A. Poor __2 points, B. Fair __4 points, C. Good __6 points, D. Very good __8 points, E. Excellent __10 points. A score of 2 -4 points was graded as poor and 5 -10 as good.

The Depression module of the Structured Clinical Interview for DSM IV (SCID) Axis 1- disorder²¹ was used to diagnose depression. It has been shown to have good inter-rater reliability for Major Depressive Disorder (MDD)¹⁸. The percentage agreement of the raters was 82% with a kappa value of 0.72. This instrument has been used in this environment to diagnose depression among diabetic patients¹⁹.

The data was analyzed using SPSS 15.0 statistical package for widows. Simple descriptive statistics such as the t-test and chi-square were used. A P-value of = 0.05 was considered significant.

RESULTS

Table 1 shows that depressed respondents had significantly higher mean 20.0 ± 22.1 and 1,020 cumulative days of sickness absence compared to the non-depressed who only had a mean of 1.1 ± 4.3 and

170 cumulative days of absence. ($t = 9.92$, $df = 198$, $p < 0.0001$).

Table 1: Depression and sickness absence

Variables	Duration of sickness absence in days		Mean	Cumulative sickness absence days	Statistics
	0-14	= 15			
Depressed	23(16.3)	28(47.5)	20.0 ± 22.12	1020	$t = 9.92$
Non-depressed	11(83.7)	31(52.5)	1.14 ± 4.33	170	$df = 198$
Total	41(100)	51(100)	21.14 ± 26.45	1090	$p < 0.001$

Table 2: In this table majority 43(84.3%) of the depressed patients perceived their work performance as poor compared to only 8(15.7%) who described their work performance as good in the last 12 months prior to study. Of the non depressed, an overwhelming majority 137(91.9%) described their work performance as good and only 12(8.1%) as poor. The non depressed had significantly better work performance ($\chi^2 = 110.8$, $df = 1$, $p < 0.0001$)

Table 2: Depression and perception of work performance

Perception of work performance	Depressed	Non-depressed	Statistics
Good	8(15.7)	137(91.9)	$\chi^2 = 110.8$ $df = 1$
Poor	43(84.3)	12(8.1)	
Total	21(100)	149(100)	$P < 0.0001$

In table 3, the depressed males had significantly higher mean days of sickness absence 35.5 ± 36.8 than non depressed 12.2 ± 14.4 , $p < 0.0001$; similarly the older age group had significantly higher mean days of sickness absence than the younger age group, $p = 0.017$. However, there was no significant difference between the singles 21.0 ± 21.4 and the married 19.6 ± 22.7 , $p = 0.87$.

Among the non depressed, only the older age group had significantly higher mean days of sickness absence, 4.9 ± 10.7 than the younger age group, 0.7 ± 2.6 , $p = 0.001$.

Table 3: Socio Demographic variables of sickness absence in the depressed and non Depressed patients

Variables	Duration of sickness absence in days		Mean	Cumulative sickness absence days	Statistics
Depressed	0-14	= 15			
Sex					
Male					
Female	4(14.8)	13(15.2)	35.5 ± 36.8	604	$t = 4.057$
Total	23(88.2)	11(45.8)	12.2 ± 14.4	416	$df = 49$
	27(100)	24(100)			$P = 0.000$
Marital status					
Singles	7(30.4)	8(28.6)	21.0 ± 21.4	315	$t = 5.0206$
Married	16(69.6)	20(71.4)	19.6 ± 22.7	3705	$df = 49$
Total	23(100)	28(100)			$P = 0.867$

Age groups					
16 – 45 years	21(87.0)	28(100)	21.3 ± 22.2	1020	t= 2.476
≥46 years	2(13.0)	0(0)	0.0 ± 0.0		df = 49
Total	23(100)	28(100)			P = 0.017

Non-depressed

Sex					
Male	37(28.0)	7(41.2)	2.0 ± 5.9	88	t=1.577
Female	95(72.0)	10(58.8)	0.8 ± 3.4	82	df = 147
Total	132(100)	17(100)			P = 0.117

DISCUSSION

This study showed that there is high rate of sickness absence associated with depression. The strength of the study lies in the fact that the study was conducted in the General Out Patients Department which offers both primary and secondary health care services and allows the results to be compared with non depressed clients outside of a psychiatric setting. Several studies have found that depression is related to long absence from work⁷ and to be significant predictor of work disability.¹⁰ Days lost from work owing to depression exceed all other disorders and the economic burden on family members and society is considerable.

Similarly, in this study there was a significant relationship between being diagnosed with depression and sickness absence. People experiencing a serious depressive episode may find it very difficult to work.^{8, 10}

Symptoms of depression often include difficulty in concentrating, problems with short term memory, withdrawing from others and lack of interest in all activities. They may also appear weepy, overtly emotional or irritable which may cause them to have difficulty getting along with co-workers and interacting appropriately with customers.

Work performance was described as poor most of the time in the past one year by depressed patients compared to the non-depressed which is in consonance with findings from previous studies.^{12, 13} This may be related to the fact that depression is associated with absenteeism and low performance at work.¹⁰

Sickness absence has been found to increase with age¹⁴ and with psychiatric diagnosis¹⁵. On the contrary, this study found being younger (16-45 years) was associated with higher mean number of days of sickness absence in the depressed patients and in the older age group among the non-depressed. Age differences in the severity of depression, help seeking behavior, recognition and or treatment may influence the duration of sickness absence.

There was a higher mean number of days of sickness

absence among the married depressed compared with the singles. Depression and marital dissatisfaction have been shown to have negative effects on physical health of the individual²⁰ and this may lead to increased spells of sickness absence.

Findings from studies on sickness absence and gender among depressed patients have not been consistent. Some studies found that women have more sickness absence days than men when depressed.¹⁶ On the other hand others found depression to be a stronger risk factor for sickness absence in men than women.¹⁷ However, in this study there was a significant relationship between depression and sickness absence in men than in women. This discrepancy may be as a result of differences in study population, gender variation in health seeking behavior¹⁷ and diagnostic procedures. Furthermore, this could be explained by the fact that social consequences of a psychiatric disorder label may be worse for men than for women. This leads to delayed utilization of health care services until late when they have deteriorated further into a poorer mental state. Consequently, they need a longer period to recover, which would ultimately lead to longer period of absence from work.

CONCLUSION: Depression was found to be related to delay return to work, especially in men of the productive age group from sickness absence. Therefore, increased efforts are needed to screen and treat for depression to improve productivity and to prevent long spells of sickness absence.

LIMITATION

The study is Hospital based and the sample size is small. Therefore, the results may not be generalizable to general population.

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