Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 1, 2021, Pages. 3845- 3854

Received 15 December 2020; Accepted 05 January 2021.

# Diagnosing the Undiagnosed Psychiatric Patients at Surgeon's Couch

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## ABSTRACT

**Context:**The most difficult problem in clinical surgery and medicine is the accurate evaluation of pain, especially abdominal pain. Many patients of chronic abdominal pain remain undiagnosed when laparotomies failed to reveal abnormalities. It is a difficult decision for the surgeon to decide for operative exploration in the absence of a diagnosis and chronic nature of disease. **Aims and objectives**: In this study we have attempted to diagnose such cases of abdominal pain which attend surgical unit and other wise remained undiagnosed and combined surgical and psychiatric approach was tried.**Setting and Design:**This study was conducted in department of Surgery and Psychiatry of a Rural Medical College. This is a case-control study.**Methods and Material:** We included 150 patients of pain abdomen of which 75 patients were having pain in abdomen of chronic nature with no identifiable cause. A combined Surgical and Psychiatric approach was tried in such cases. One of us (P.B.) who did not know the real diagnosis carried out detailed psychiatric evaluation before surgery (pre-operative) and followed up patients at 6months and 2 years. The ICD-10 was used to diagnose patients with psychiatric illness and the P.G.I

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Health questionnaire – N2 was used pre and post operatively to test for neuroticism and lie scores.**Statistical analysis used:** Statistical analysis was done by using appropriate tools.**Results:**Out of these 75 patients in which no abnormality was detected after exploration (Negative laparotomy), 21 had mobile caecum (diagnostic entity doubtful), 19 hysterical neurosis, 18 hypochondriasis, and 17 had depression. These patients were compared with controls (Positive laparotomy). It was interesting to note that negative laparotomy patients had significantly higher multisystem involvement, longer duration of illness, more than 6 (mean) medical opinions,and higher previous surgery, lie & neuroticism scores than controls. After surgery, 23 patients improved, 33 remained same (needing psychiatric intervention), and 19 became worse. **Conclusions:**Thus, in conclusion it is more important to know what type of a person the disease has than what disease the person has.

**Keywords:**Chronicabdominal pain, laparotomy, psychogenic pain, hypochondriasis, neurosis, depression

## INTRODUCTIION

The most difficult problem perhaps in clinical medicine and surgery is the accurate evaluation of pain especially abdominal pain. It is further difficult when the painof a chronic nature and investigations fail to reveal any abnormalities. Thus,patientswith chronicabdominal pain remained undiagnosed. In such cases, it is a difficult decision for surgeons to favor operative exploration. These cases are problematic cases on surgeon's couch; and such cases are more likely to shunt form one department to another department, even after operations. Cohen had undertaken a study to test hypothesis that women with hysteria undergo an excessive surgical procedure in which he reported that gynecological operations were prominently seen in hysteria (43.7%). He further reported that patients of hysteria undergo a significantly excessive number of surgical procedures. The average number of major operations for each patient with hysteria was 3.8. It has been suggested that excessive surgeries characterize the psychosomatic patients [1]. In children with recurrent abdominal pain an indisputable organic cause could be demonstrated only in 6.8% among which renal disease accounted for half [2]. A study which evaluated psychological aspects of recurrent abdominal pain in children revealed high levels of anxiety in which cognitive behavior therapy centered therapy proved to successfully treat the recurring pain [3]

Thus, it seems that all the prejudices are traced to the abdomen [4]. Clarke and Zieglor (1942) found excessive previous surgery in psychiatric patients [5]. Woodhouse and Bockner (1979) studied the patients of chronic abdominal pain to rule out whether the pain is surgical or psychiatric, and found that diagnosis was possible in only 75% of cases, and concluded that the chronic non-specific abdominal pain is more often a psychiatric than a surgical symptom.[6] Similarly, non-cardiac origin of chest pain is pain felt in the chest which on sufficient cardiac evaluation reveals no signs of impaired cardiac function. Such patients more commonly have co morbid psychiatric conditions such as generalized anxiety disorder or panic disorder [7]

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In this study we have attempted to diagnose such cases of abdominal pain which attend surgical unit and other wise remained undiagnosed and a combined surgical and psychiatric approach was tried.

## MATERIAL AND METHODS

This study was conducted in department of Surgery and Psychiatry of Institute Hospital,Institute of Medical Sciences. We included all consecutive patients who complained of pain in the abdomen. Only hospitalized patients were included in the study. We included 150 patients of pain abdomen. Out of these 150 patients, 75 patients were having pain in abdomen of chronic nature and in these patients,routine, and specific investigations, did not reveal any abnormality. In such cases it wasdifficult for surgeons to decide for exploratory procedure. A combined Surgical and Psychiatric approach was tried in such cases. We have compared these cases with age and sex matched control group of patients with pain in abdomen on whom an organic diagnosis was made based on clear clinical feature and positive radiological findings. One of us (P.B.) who did not know the real diagnosis carried out detailed psychiatric evaluation before surgery (pre-operative) and followed up patients at 6months and 2 years. Thus, assessor was 'blind' to the diagnosis. The P.G.I Health questionnaire – N2 was used Pre and post operatively. This questionnaire contains 60 items, out of which 50 items were for neuroticism and 10 items for lie score. A semi structured proforma was used, incorporating socio demographic characteristicsof patients, history of previous operations, symptoms of various symptoms involved, medical help seeking pattern etc.

## OBSERVATIONS AND RESULTS

The patients of pain abdomen were assessed and were compared with the controls with pain abdomen of an organic origin. The assessment was done preoperatively and post operatively 2 weeks after operation. Assessor was blind for diagnosis.

Table-IStudy Group (Negative Laparotomy)

| **Total** | **N=75** |
|---|---|
| **Mobile Caecum** | 21 (28%) |
| **Hysterical/ Neurosis** | 19 (25.3%) |
| **Hypochondriacal Neurosis** | 18 (24%) |
| **Depressives** | 17 (22.7%) |

Out of the 75 patients in whom no abnormality was detected after exploration (Negative laparotomy), 21 were found to have mobile caecum (diagnostic entity doubtful), 19 hysterical neurosis, 18 hypochondriacal neurosis and 17 depressives (Table – I). These patients were compared with the controls (Positive laparotomy).

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Table – IIAGE DISTRIBUTION

| Age in years | Positive laparotomy (N=75) | Mobile Caecum (N=21) | Negative laparotomy (N=54) |
|---|---|---|---|
| **16-25 years** | 5 (6.6) | 4 (19.04) | 11 (20.3) |
| **26-35 years** | 15 (20) | 8 (38) | 30 (55.5) |
| **36-45 years** | 35 (46.6) | 7 (33.3) | 8 (14.6) |
| **>45 years** | 20 (26.6) | 2 (9.52) | 5 (9.25) |

Age distribution is shown in table II. Forty-one patients (75.8%) were below 35 years of age in negative laparotomy while 55 (73.2%) patients were above 36 years of age in positive laparotomy (control) group. Thus, the patients with negative laparotomies were overall younger in age while older patients belonged to the positive laparotomy group.

Table – IIISEX DISTRIBUTION

| | Positive Laparotomy (N=75) | Mobile Caecum (N=21) | Negative Laparotomy (N=54) | Total |
|---|---|---|---|---|
| **Male** | 55 (73.3) | 12 (57.1) | 22 (42.6) | 90 |
| **Female** | 20 (26.6) | 9 (24.9) | 31 (57.4) | 60 |
| **Total** | 75 | 21 | 54 | |

**$X^{2=}$12.5 DF=2 P=<0.01**

Sex distribution is shown in table – III. Females significantly have more negative laparotomy than the males. Majority of males have positive laparotomy.

Table – IV.EDUCATION

| | Positive Laparotomy (N= 75) | Mobile Caecum (N=21) | Negative Laparotomy (N=54) |
|---|---|---|---|
| **Illiterate** | 35 (46.6) | 12 (57.1) | 17 (31.48) |
| **Matric** | 22 (29.3) | 4 (19) | 8 (14.8) |
| **Graduate** | 18 (24) | 5 (23.8) | 29 (53.7) |

Educational distribution is shown in table IV. In negative laparotomy patients, illiterates were more than the literates, while in positive laparotomy group literates were more than illiterates.

Table – V

| | Positive laparotomy (N=75) (A) | Mobile Caecum (N=21) (B) | Negative Laparotomy (N=54) (C) |
|---|---|---|---|
| **Duration of** | 2 ± 1.5 | 3.5 ± 2.5 | 5.2 ± 4.2 |

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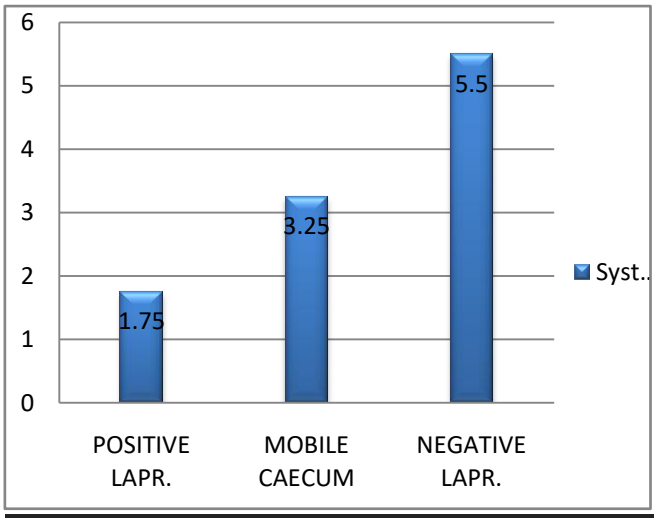
| | | | |
|---|---|---|---|
| **symptoms (years) (X)** | | | |
| **Previous surgery (Y)** | 0.56 ± 0.2 | 0.78 ± 0.3 | 2 ± 1.1 |
| **Previous Med. Treatment (Z)** | 1.8 ± 0.5 | 2.1 ± 1.2 | 6.1 ± 4.3 |

| | | | | | |
|---|---|---|---|---|---|
| **(X) AB** | **AC (Y)** | **AB (Z)** | **AC(X)** | **AB** | **AC** |
| **t=3.5** | **t=6.04** | **t=0.42** | **t=8.33** | **t=1.67** | **t=8.1** |
| **p=ے.01** | **p= <0.01** | **p=N.S.** | **p=<0.001** | **p=N.S .** | **p=<0.001** |

Duration of symptoms were significantly higher in negative laparotomy – Table V (mean duration- 5.2, S.D. - 4.2) than positive laparotomy (mean duration-2. S.D.-1.5).This difference was statistically significant (p=<0.01). Negative laparotomy patients have significantly higher previous surgery (mean 2, S.D. 1.1) than positive laparotomy group (mean 0.56, S.D. 0.2). The difference was statistically significant (p=<0.001). Negative laparotomy patients had significantly higher previous medical consultation than controls. (In negative laparotomy mean previous medical consultation was 6.1, S.D. =4.3, while in control mean previous medical consultation was 1.8, S.D. = 0.5 and p = <0.001)

Figure -1




Thus, in negative laparotomy more systems were involved than controls (Figure -1).

Table – VISYMPTOMS OF VARIOUS SYSTEMS

| | **Positive laparotomy** | **Mobile Caecum** | **Negative Laparotomy** |
|---|---|---|---|
| **G.I.T** | 63 (84) | 15 (71.4) | 51 (94.4) |
| **C.V.S.** | 5 (6.7) | 5 (23.8) | 10 (18.5) |
| **R.S.** | 3 (4) | 3 (14.28) | 8 (14.8) |
| **C.N.S.** | - | 1 (4.76) | 4 (7.4) |
| **Neuro-muscular** | 4 (5.3) | 3 (14.28) | 15 (27.2) |
| **Mental** | 5 (6.7) | 2 (9.52) | 20 (37) |

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| | | | |
|---|---|---|---|
| **Others** | 3 (4) | 1 (4.76) | 13 (24.07) |

Symptoms of various systems involved are shown in table-VI. In positive laparotomy, mean system involvement was 1.75. While for mobile caecum it was 3.25 and for negative laparotomy patients it was 5.5.

Table – VIIP.G.I. – $N_2$ Scored

| | **Positive Laparotomy (N=75) (A)** | **Mobile Caecum (N=21) (B)** | **Negative Laparotomy (N=54) (C)** |
|---|---|---|---|
| **Neuroticism (50 items) (X)** | 8.3 ± 11.3 | 10.5 ± 5.4 | 17.29 ±7.4 |
| **Lie score (10 items) (Y)** | 2.33 ± 2.56 | 3 ± 1.2 | 4 ± 2.3 |

**(X) AB AC**
**t=4.0 t=5.07**
**p=N.S. p=<0.001**

**(Y) AB AC**
**t=1.19 t=3.79**
**p=N.S. p=<2.01**

Neuroticism scores and lie Scores were significantly higher in negative laparotomy group than controls (P=<0.001 and <0.01 respectively) represented in table VII.

Follow up was done at 6 months and 2years (mean 1.2 years). After operation in Negative laparotomy, the symptoms relieved in 22.2% cases, no response was seen in 46.3% and worsening in 31.5% cases; while in controls the symptoms were relieved in 93.3% cases after operation, no response in 5.3% cases and worsening in 1.3% cases**.**

Table – VIIIFollow UP6 MTHS- 2YRS. (1.2 Yrs.)

| | **Positive Laparotomy (N=75)** | **Mobile Caecum (N=21)** | **Negative Laparotomy (N=54)** |
|---|---|---|---|
| **Relieved** | 70 (39.3) | 11 (52.4) | 12 (22.2) |
| **No response** | 4 (5.3) | 8 (38.1) | 25 (46.3) |
| **Worse** | 1 (1.3) | 2 (9.5) | 17 (31.5) |

## DISCUSSION

In this study we found that unnecessary operations were performed on patients, who attended the surgery unit. Such undiagnosed psychiatric patients who attended the surgery unit, have been diagnosed. We found that patients of negative laparotomy (subjects) were indeed suggesting some or other form of psychiatric disorders. In such cases all investigations including radiological findings did not help in diagnosis and a dichotomy exists between functional or organic disorders of abdomen. These patients were diagnosed as 28% mobile

caecum (diagnostic entity doubtful), 25.3% hysterical neurosis, 24% hypochondriacalneurosis, and22.7% with depression as per the diagnostic criteria of International Classifications of Diseases 9th revision. [8].When such patients were compared with controls, it was interesting to note that negative laparotomy patients had significantly higher multisystem involvement, longer duration of illness, more than 6 (mean) medical opinions, higher incidence of previous surgery, high neuroticism and lie scores than controls.
Kroenke et al. (1993) [9] analyzed data on 13538 individuals who were interviewed during the Epidemiological Catchment Area Study using the Diagnosing Interview Schedule. They focused on 26 physical symptoms out of 38 symptoms which most commonly present to primary care. Abdominal pain was found to be prevalent in 23.6% of the study population. These patients were mostly females (58.3%). Elderly patients (>65 years of age) constituted only 16.3% of these patients. These findings are consistent with our study where there were significantly greater number of females and younger patients in the negative laparotomy group. While younger demographics more often mimic functional disorders, elderly population needs to be carefully and confidently cleared of organicities such as cancer and chronic mesenteric ischemia. As the newer "baby-boomer" generation enters adulthood along with advanced techniques to screen and prevent chronic and fatal conditions like cancer, there has also been a surge in symptomatic elderly patients presenting with functional abdominal symptoms.[10]

Carol et al (1996) [11]evaluated gastrointestinal symptoms and psychiatric disorders in the general population using the Diagnostic Interview Schedule and administered it using trained lay volunteers. They included 4 gastrointestinal symptoms in their study which were abdominal pain, constipation, diarrhea, and abdominal bloating. The prevalence of unexplained abdominal pain was found to be 5.9% in men and 7.7% in women, again conforming to our findings. The study also found a higher prevalence of depression and neurotic disorders in patients who had 2 or more gastrointestinal symptoms. These results corroborate with our findings. The difference in prevalence of depression can be attributed to the difference in sample size and difference in instrument used for the study.

Ohayon et al conducted a cross sectional survey to evaluate the relationship of chronic painful physical conditions (CPPC) with major depressive disorder and concluded that patients who had depressive symptoms were four times more likely to complain about some form of CPPC. These painful conditions further prolong the duration of the patient's depressive mood.[12]

A study conducted by E. Lexne et al. (2020) [13]evaluated 165 consecutive patients admitted in their emergency department due to abdominal pain using Prime-MD. Prime-MD is a diagnostic interview tool divided into 2 parts. The first part of the tool evaluates physical symptoms and psychiatric symptoms using 28 questions. The study did not find any statistically significant difference between the two sexes, however, the study found that younger population presents more often with non-specific abdominal pain further corroborating with our findings. The study also found a higher rate of alcohol use disorder in patients with non-specific abdominal pain. The study reported higher rates of feelings of

"worrying too much about different things" in patients with organic dyspepsia and non-specific abdominal pain compared to patients with a specific abdominal diagnosis. These findings corroborate with our findings in the group of patients with negative laparotomy having higher neuroticism scores. The study reports patients of organic dyspepsia have higher rates of psychiatric co-morbidity compared to both, specific abdominal diagnosis, and patient with non-specific abdominal pain. Our study did not include patients of organic dyspepsia due to the variations in study setting and study design.

Faessler et al used screening questionnaires and interviews in patients presenting to emergency services and detected psychological distress in 4 – 47% of the patients. Their findings revealed that factors such as age and sex were highly associated with the prevalence of anxiety and depression in these patients.[14]

Fagerstrom et al compared the long term mortality and morbidity of patients of nonspecific abdominal pain (NSAP) with those who were diagnosed with acute appendicitis (AA). Those with nonspecific abdominal pain suffered chronic pain and peptic ulcers than those of acute appendicitis. In the long term 20 year follow up, although more than 70% NSAP patients and more than 90% patient of AA were asymptomatic, overall mortality was greater in those with NSAP.[15]

During follow up, patients with negative laparotomy showed deterioration in 31.5% cases, no change in 46.3% cases and improvement in 22.2% cases. The mobile caecum group falls in between positive and negative laparotomy group in our findings. Stockton et al. (1985) also is their study compare the role of some psychosocial variables in different groups of patients in order to see whether patients with upper abdominal pain could be distinguished from other groups of patients on the basis of psychosocial characteristics. [16]When a patient of abdominal pain is suspected to have psychiatric comorbidity, the patient's behavior to the pain is of importance. Most commonly the patient may have bizarre explanations of the pain, may be associated with other symptoms, may cover large body surface area and especially may complain of chronic pain lasting for many years.[17]

## CONCLUSION

It is rightly said that abdomen is the sounding board of emotions. Whenever the investigation for pain abdomen is negative, a careful observation for the number of systems involved, duration of illness, previous medical opinions, high incidence of previous surgery, high ill and neuroticism scores is required. These patients may be of functional in origin. In such cases a combined surgical and psychiatric opinion will be helpful.

Thus, it is more important to know what type of a person has the disease than what disease the person.

## DECLARATION

Scientific Responsibility Statement The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation,

writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

**Animal and human rights statement:**
All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.
**Funding: None**

**CONFLICT OF INTEREST**
None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.
**Informed consent:**

Informed consent was obtained from all individual participants before inclusion in the study.

**Ethical approval for study protocol /study design /Methodology**:

The study was granted approval by the Institute Ethics Committee.

**Contribution:**
This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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