GASTROINTESTINAL SYSTEM[1]

I. INTRODUCTION

A. OUTLINE OF HIGHLIGHTED CONDITIONS

1) Hernias

2) Hemorrhoids

3) Ulcerative Colitis

4) Irritable Bowel Syndrome

5) Peptic Ulcers

6) Hepatitis

B. IMPLICATIONS FOR JOB PERFORMANCE

Gastrointestinal conditions can impair patrol officer performance for diverse reasons. Hernias can result in sudden incapacitation. Hemorrhoids can interfere with prolonged sitting. Other conditions can cause chronic fatigue, frequent diarrhea, and require extensive sick leave.

II. EVALUATION OF COMMON CLINICAL CONDITIONS

1) HERNIAS:

a. GENERAL CONSIDERATIONS:

During high static exertion, increased intra-abdominal pressure can cause herniation of the bowel through inguinal and ventral abdominal wall defects with resulting pain, incarceration, and potential strangulation. This could occur during a variety of typical patrol officer activities, including:

- Lifting and carrying incapacitated persons and other very heavy objects without assistance;

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[1]Author: R. Leonard Goldberg, M.D.
Participating Specialists: Craig Johanson, M.D.; Ralph Koldinger, M.D.; Michael Lawson, M.D.

- Pushing heavy objects such as vehicles;
- Breaking down locked doors;
- Subduing combative subjects.

The resulting pain could be sufficient to cause sudden incapacitation, resulting in a direct threat to self and others.

Surgical repair, including the newer outpatient laparoscopic techniques, is very successful for inguinal and ventral hernias unless the latter is secondary to medium-to-large incisional defects.

b. RECOMMENDED EVALUATION PROTOCOL:

When a hernia is suspected, a surgical consultation is necessary to confirm the diagnosis and to correct the condition. Employment decisions should be deferred until the surgeon clears the candidate for very heavy lifting and participation in contact sports. This typically involves 4 weeks for open repair or 2-3 weeks for a laparoscopic repair of an inguinal hernia (Millikan and Deziel, 1996).

2) HEMORRHOIDS

Although there is no risk of sudden incapacitation, symptomatic hemorrhoids can make prolonged sitting quite uncomfortable. Current treatment of hemorrhoids is usually non-invasive and very successful within a short period of time.

For these reasons, the employment of candidates with symptomatic, prolapsed, or significantly bleeding hemorrhoids should be deferred until successfully treated. Attention to precipitating factors, such as chronic constipation, should be addressed.

3) ULCERATIVE COLITIS

a. GENERAL CONSIDERATIONS:

Ulcerative colitis (UC) is a chronic disorder of generally unpredictable course characterized by remissions and recurrences. This condition has relevance to the patrol officer position for several reasons:

- Manifestations, such as frequent diarrhea and urgency, can interfere with an officer's ability to conduct surveillances.

- Secondary anemia, weakness, arthritis, or fatigue can limit an officer's functional capacity during a critical incident.

- Use of sick leave may be in excess of the amount which can be reasonably accommodated by the hiring agency.

It is a common misconception among both patients and physicians that stress can exacerbate UC. The preponderance of evidence and the consensus opinion among gastroenterologists is that stressful life events or depressed mood do not precipitate exacerbations (North, et al., 1991; Helzer, et al., 1984).

Although the severity of symptoms is generally proportional to the amount of bowel involved, this can vary greatly, as can the response to medication. Fortunately, the typical candidate has had only a single episode of "colitis," (which may have been infectious in origin), or has an established disease that is now in remission or well-controlled on medication.

Ulcerative proctitis is the mildest form of UC. Approximately 40% will have a permanent remission after the first attack. Only 10-15% will develop more extensive disease, and the majority will do so within the first year or two after the initial attack (Powell-Tuck, et al., 1977). The risk of progression is somewhat higher if the onset is before age 21.

When UC extends beyond the rectum, 60% will develop relapsing disease, and 20% will suffer chronic unremitting symptoms (Bayless, 1988). One study found that 50% of patients were symptomatic at any one time (Henriksen, et al., 1985). The extent of colonic involvement is associated with the severity of the disease, but does not affect the probability of recurrence. A minority of patients will develop extraintestinal manifestations such as arthritis, uveitis, or skin disease (Bayless, 1988). Those with pancolitis are at an increased risk of colon cancer (0.5-1% per year) if they have had the disease for 10 years or more (Sugita, et al., 1991).

Therapy can substantially alter the course of the disease. Treatment with 5-aminosalicylic acid drugs (sulfasalazine, mesalamine, olsalazine, or balsalazide) can be used to reduce symptoms and prevent recurrences. Maintenance therapy in asymptomatic patients with negative sigmoidoscopic findings will keep recurrence rates below 20% (Misiewicz, et al., 1965; Dissanayake & Truelove, 1973; Azad, et al. 1980). However, approximately, 5-15% of patients with mild-moderate disease will still require surgery within 10 years (Sinclair & Brunt, 1983); 30-50% of those who present with pancolitis will have surgery within 2-3 years (Bayless, 1988; Podolsky, 1991). Total procotocolectomy is curative, but is associated with a mortality rate of up to 2% (Bayless, 1988).

b. RECOMMENDED EVALUATION PROTOCOL:

The physician must obtain a detailed history of the course, complications, and treatment. Candidates must be questioned regarding the number of bowel movements per day, the presence of blood or mucus, urgency, fever, joint or abdominal pain, uveitis, skin manifestations, and the use of sick leave over the past two years. Review of medical records is strongly recommended. Documentation of sick leave use for the past two years is also helpful. If a candidate has had colonic disease for more than 10 years, it is prudent to require a colonoscopy (or review the results of one performed within the last two years) to evaluate pre-malignant changes and the need for surgery (Glickman, 1987). Testing of CBC, sed rate, stool occult blood, and C-reactive protein is helpful.

GROUP I: HISTORY OF ONE EPISODE ONLY AND CURRENTLY ASYMPTOMATIC

In general, restrictions cannot be justified unless the episode was recent. In this case, a deferral period of one year to observe the course of the disease may be justified since most of those who suffer relapses will do so within this time period (Glickman, 1987).

GROUP II: HISTORY OF RELAPSING DISEASE

Assessing the risk of recurrences and associated morbidity is best done by consideration of the applicant's past history. There are no effective laboratory tests to serve as markers for severity or recurrence risk. However, if the applicant claims to be in remission currently, this can be supported by testing of acute phase reactants such as serum sedimentation rate and C-reactive protein (Cronin, 1998), and stool occult blood.

<u>Level 1: Asymptomatic, sick leave use has not been excessive, sed rate, C-reative protein, stool occult blood and CBC are normal</u>

In general, no restrictions are warranted since these candidates are in remission. However, if the applicant is on corticosteroids, emotional lability is a potential side-effect of concern. This should be evaluated through review of medical records and psychological screening.

<u>Level 2: In remission, but use of sick leave over last two years exceeds that normally available</u>

Advise the hiring agency to consider whether the applicant's use of sick time can be reasonably accommodated.

Level 3: Currently symptomatic or anemic

Work limitations regarding surveillance or exercise-related activities may be justified on an individual basis. Advise the hiring agency if excessive use of sick leave is probable.

4) IRRITABLE BOWEL SYNDROME

a. GENERAL CONSIDERATIONS:

Irritable bowel syndrome may present as chronic recurring periods of diarrhea or constipation which may be associated with pain. Although this condition is characterized by an absence of detectable organic pathology, it may have a negative impact on performance as a patrol officer due to the following considerations:

- Urgent diarrhea may disrupt surveillances;
- Most patients will have abnormal scores on general psychological testing due to hysteria, anxiety, or depression;
- It is sometimes treated with drugs that have sedative side-effects, such as Lomotil, codeine, dicyclomine, or various anti-anxiety agents;
- 75% of those seeking medical treatment will not have permanent remissions;
- Psychological stress may trigger an exacerbation of symptoms in some patients (Dancey, et al., 1995; Schuster, 1982; LaMont & Isselbacher, 1987).

The last consideration is particularly relevant, given the high degree of emotional stress associated with the patrol officer position. Research has shown that the job of policing is an extremely stressful occupation (Cooper, 1982; Hurrell, 1977; Kroes, 1976; Rubinstein, 1973; Davidson & Veno, 1977; Farmer, 1990).

b. RECOMMENDED EVALUATION PROTOCOL:

The physician must assess the manifestations of the syndrome (diarrhea vs. constipation), course, severity, treatment, and relation to stress from thorough questioning of the candidate and a review of all relevant medical records. If diarrhea is present, determine whether it is present only in the morning or throughout the entire day. The physician should also confirm that a diagnostic evaluation was performed to rule out any underlying organic disease. Documentation of sick leave use for the past two years is also helpful.

Given the prevalence of abnormal psychological profiles in this population, it may be efficient to defer any extensive medical evaluation until the candidate has successfully completed psychological screening.

GROUP I: HISTORY OF CONSTIPATION OR HISTORY OF DIARRHEA OCCURRING IN EARLY MORNING ONLY, AND NO USE OF SEDATING MEDICATIONS; SICK LEAVE USE IS NOT EXCESSIVE

It is difficult to justify restrictions for these candidates since their condition is unlikely to impair job performance, even if aggravated by stress. Use of loperamide or hyoscyamine should not cause significant sedation.

GROUP II: HISTORY OF REFRACTORY NON-A.M. DIARRHEA, USE OF SEDATING MEDICATION TO CONTROL SYMPTOMS, OR EXCESSIVE USE OF SICK LEAVE

Disease of this severity will significantly interfere with patrol officer duties; therefore, appropriate work restrictions are in order. If the candidate is currently asymptomatic, restrictions against exposure to patrol officer stress may be warranted if the medical records clearly show that stress causes severe exacerbations in this applicant.

5) PEPTIC ULCERS

Helicobacter pylori causes the majority of duodenal and gastric ulcers. Many of the remaining ulcers are caused by use of NSAIDS. After successful treatment of H. Pylori, ulcer recurrences are infrequent. Current antibiotic regimens have lowered the morbidity associated with peptic ulcers to the extent that, in general, consideration of this condition is not necessary for police applicants. The one possible exception may be an applicant who has frequent severe recurrences and has not been properly evaluated. In this case, a short deferral to allow for evaluation and treatment may be justifiable.

6) HEPATITIS

a. GENERAL CONSIDERATIONS:

The physician will have little difficulty in evaluating the rare candidate with severe symptomatic hepatitis or chronic hepatic failure. The more typical candidate is a chronic carrier of the HBV or HBC virus who claims to be asymptomatic. There are several issues of concern which are relevant to performing essential police duties:

1) The risk of infecting others (see Infectious Diseases chapter),

2) The applicant's current physical state, and

3) The probability of significant deterioration in the immediate future.

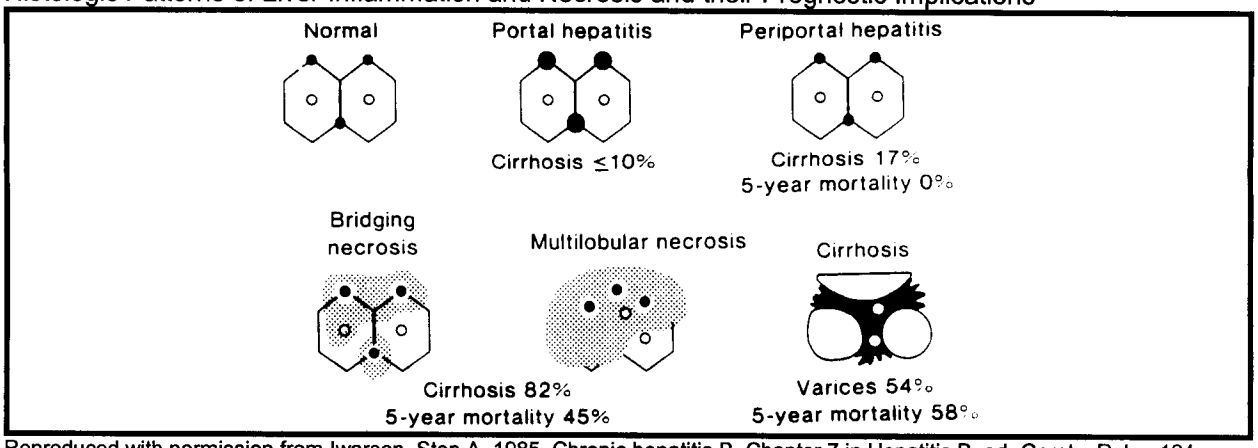
Regarding the applicant's current physical state, the most common problems are malaise and easy fatigability. However, anorexia, nausea, right upper quadrant pain, and weight loss can occur. Review of medical records and possibly sick leave records is very important to determine the severity of symptoms, and whether they would interfere with the performance of police duties.

If the candidate is presently asymptomatic or the symptoms are not severe, an assessment is necessary as to whether he or she will be able to perform patrol officer duties in the immediate future (i.e., 2 years). Unfortunately, the absence of symptoms is an unreliable indicator of the underlying clinical state and future prognosis. Deterioration of functional ability could be due to progression of the disease or the initiation of interferon therapy. Interferon is usually administered for 4 months for hepatitis B and for 12 months in combination with ribavirin for hepatitis C. Side effects which could significantly impact the performance of police duties such as fatigue and depression are common. Due to side effects, the dose of interferon has to be reduced in 10-40% of patients, and discontinued early in 5-10% (Hoofnagle, 1997).

Hepatitis B: In patients who have chronically elevated liver enzymes and HBeAg+, 50% will develop cirrhosis within 5 years (Lee,1997). Biopsy has prognostic value. Chronic persistent hepatitis characterized by inflammation limited to the portal area is generally not progressive (Bianchi, 1977) unless the patient has HBeAg+ (Aldershvile, 1982). Chronic active hepatitis may have a very poor prognosis, depending on the appearance of the biopsy (Figure IV-1). Interferon is recommended for patients with persistent elevations of liver enzymes, detectable levels of HBsAg, HBeAg, and HBV DNA in serum, and chronic hepatitis on liver biopsy (Hoofnagle 1997).

Hepatitis C: 20-50% of patients will progress to cirrhosis, but this progression is not predictable. It can develop in 1-2 years after infection, or more typically, develop in 20-30 years. Liver biopsy is not always helpful in predicting the development of cirrhosis, since even chronic active hepatitis may not be progressive (Hoofnagle, 1997). Similarly, the finding of chronic persistent hepatitis does not always indicate a benign course unlike in hepatitis B (Gerber, 1992). Treatment with interferon and ribavirin is recommended for patients with elevated aminotransferase levels, HCV-RNA in serum, and chronic hepatitis on biopsy. Side-effects of interferon therapy are similar to those in hepatitis B, but may be less severe due to lower dosing (Hoofnagle, 1997).

FIGURE IV-1
Histologic Patterns of Liver Inflammation and Necrosis and their Prognostic Implications



Reproduced with permission from Iwarson, Sten A. 1985. Chronic hepatitis B. Chapter 7 in Hepatitis B, ed. Gerety, R.J., p124. Orlando, FL: Academic Press.

b. RECOMMENDED EVALUATION PROTOCOL:

Candidates with a history of chronic HBV or HCV viral infection need to be questioned regarding symptoms such as jaundice, nausea, vomiting, easy bruisability, arthralgias, myalgias, fever, and easy fatigability. Details regarding prior evaluations and treatment are important. The physical examination should include palpation of the liver, and spleen, and inspection of the skin (spider angiomas). Laboratory analysis should include liver enzymes, platelet count, albumin, and INR. Medical record review is strongly recommended if enzymes are elevated.

GROUP I: ASYMPTOMATIC CHRONIC HBV/HCV INFECTION WITH NORMAL LIVER ENZYMES

Risk of significant progression in the immediate future is not very high.

GROUP II: ASYMPTOMATIC CHRONIC HBV/HCV INFECTION WITH ELEVATED LIVER ENZYMES

Request previous records and require an evaluation from the candidate's private physician regarding whether interferon is recommended. Temporary deferrals to assess the impact of potential side-effects would be warranted if interferon is recommended. If treatment is not recommended, assess the 2-year prognosis for significant morbidity based on the following:

a) Recent liver biopsy (if available) -- For HBV, bridging necrosis, multilobar necrosis, or cirrhosis indicate poor prognosis, especially if associated with significant inflammation. Those with a diagnosis of

CPH from a previous biopsy do not need to be rebiopsied, unless there is significant inflammation present or the candidate is HBeAg+. For HCV, only the presence of cirrhosis reliably indicates poor prognosis in the immediate future.

b) The severity and time course of past symptomatic episodes. These are likely to recur unless the candidate has taken interferon, and is in the minority of patients (<40%) who have a sustained positive response to treatment. Due to the frequency of relapses after an initial response, "success" cannot be reliably determined until 6 months after treatment has finished. At that time, liver enzymes should still be normal with no detectable HBV DNA, HBeAg, or HCV RNA (Hoofnagle, 1997).

GROUP III: SYMPTOMATIC

Restrictions are warranted if the symptoms will interfere with the safe or effective performance of essential duties. If this is not the case, evaluate the risk of significant deterioration as per GROUP II.

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