Liver laceration due to blunt abdominal trauma and its management in a peripheral hospital.

Sir,

The liver is the most commonly injured organ following a blunt trauma to the upper abdomen and right lower chest from road traffic accidents. On 12.05.1420 a young energetic male, 25 years old was brought to the emergency room of Turaif Government Hospital with severe hypovolemic shock, and systolic blood pressure (BP) of 90mmHg. He sustained blunt trauma to the anterior aspect of the right lower chest and upper abdomen [abrasion - 6cm/5cm] with blood stained frothy expectoration. The abdominal tap following resuscitation revealed hemoperitoneum. His chest x-ray showed evidence of pulmonary contusion of patchy distribution. Clinically and radiologically there was no evidence of fractured rib or hemopneumothorax. The hemoperitoneum and the ongoing hemorrhage intraperitoneum compelled an emergency laparotomy inspite of poor general condition with adequate blood transfusion. In view of the pulmonary contusion, a right upper mid line laparotomy with right subcostal extension was performed. There was grade 4 laceration of the liver involving right superior and posterior surfaces [about 18cm] dividing the right lobe into 2 halves. Also there was a small laceration over the anterior surface of the lobe [3cm]. The poor general condition of the patient made a short life saving procedure mandatory, and the liver surfaces were sutured in an interrupted fashion with 2/0 chromic catgut over Surgicel (absorbable Hemostat) packing, and the abdomen was closed with a PVC drain in the right flank. Five units of blood [2500ml] were transfused perioperatively with a clear urine output of 500 ml and a BP 110/80 MmHg. Severe pulmonary edema complicated recovery, which was managed successfully by the anesthetist by positive pressure ventilation and endotracheal suction. The patient was kept under close vigilance in the theater. Rebleeding from the drainage site started 2 hours after surgery. In order to check the bleeding and minimize the sequelae of massive blood transfusion and consequent caogulopathy, we decided upon a major task of relaparotomy on the patient with the existing pulmonary complications. The same incision was used to gain access into the site of bleeding. After controlling the arterial bleeding by occlusion of the right hepatic artery with a vascular clamp [Pringle's maneuver] we succeeded in controlling the bleeding from the liver by 2/0 a traumatic chromic catgut interrupted sutures over Surgicel packing after removal of the earlier ones. The abdomen was closed with suction drainage over the right flank. The postoperative period was very smooth with ventilatory support for 12 hours. The patient was under cover of Ceftriaxone and Flagyl. No significant pyrexia was noted. Oral fluids were resumed on the 3rd postoperative day and the suction drain removed. Hemoglobin dropped to 5.3 mg/dl on admission and shot up to 9.8 gm/dl on his 3rd postoperative day. He received 3.5L of blood during the pre-intra and postoperative periods. The serum enzymes serum glutamic pyruvate transaminase and serum glutamic oxaloacetic transaminase were elevated as expected. Plain x-ray abdomen showed a fluid level on the 6th postoperative day and the temperature was 38^0C with a total leukocyte count of 5800/cm when he was shifted to Riyadh for further management at his own request.

Surgical techniques like suturing, inflow occlusion, packing, hepatic artery ligation; mesh hepatorrhaphy; resection and atrio-venous bypass are the usual procedures undertaken in the management of liver injuries. In our case interrupted sutures over surgical packs of transcapsular liver injury were successful. The overall mortality in liver injuries is 11% and morbidity is 22% in Grade 3, 4 and 5 injuries with associated visceral injuries increasing the mortality rate to 50%.[1,2] We report this case in order to emphasize that a well timed unhesitating relaparotomy in the face of inadequate facilities in a peripheral hospital saved a young adult male with a grade 4 liver laceration and the importance of simple abdominal tap as a great diagnostic help in the absence of ultrasonography and computerized tomography scan.[1,2]

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Folate deficiency and neurologic complications in elderly Omani patients.

Sir,

Vitamin B_{12} and folate deficiencies are highly prevalent in the geriatric population.[1,2] Studies revealed that low serum vitamin B_{12} was observed in 5-21% of geriatric patients and folate in 5-19% of geriatric patients. Neurological impairment due to vitamin B_{12} deficiency is well-known, however, folate deficiency, previously considered free of neurological consequences, can also be associated with psychic and mental deterioration, neuropathy and even spinal cord syndromes similar to those observed in vitamin B_{12} deficiency.[3-5] Since the symptoms related to vitamin B_{12} and folate deficiency can sometimes be very subtle and go unnoticed by patient and physician alike, we prospectively evaluated the neurological status, as well as serum vitamin B_{12} and folate levels in elderly Omani patients with no clinical evidence or history of folate or vitamin B_{12} deficiency.

Elderly patients (aged 55 years or above not suffering from any major organ failure) referred to the Ophthalmology Clinic and presenting with benign ophthalmological problems were enrolled after providing informed consent. Subsequently, they underwent a thorough neurological examination and a blood sample was taken for the analysis of serum vitamin B_{12} and folate levels, red cell folate levels, and hematological parameters (hemoglobin (HB), Hematocrit (Hct), mean cell hemoglobin (MCH), mean cell hemoglobin concentration (MCHC), mean cell volume (MCV) and red blood cell count (RBC). Vitamin B_{12} in serum was measured by a microparticle enzyme intrinsic factor assay (Imx B_{12}, Abbott Laboratories). Serum and red cell folate concentrations were measured with an ion capture assay (Imx Folate, Abbott Laboratories). A Coulter STKs Blood Analyzer using spectrophotometry and the electrical impedance principle analyzed the hematological parameters.

One hundred and ten elderly Omani patients (47 males and 63 females) participated in this study. The mean age was 58.4 $\pm$ 6.6 years. The hematological results were the following: Hb 13.64 $\pm$1.52 g/dl, Hct 0.41 $\pm$ 0.04, MCH 26.41 $\pm$ 3.35 pg. MCHC 33.05 $\pm$ 3.56 g/dl, MCV 79.04 $\pm$ 9.46 fl, RBC 5.22 $\pm$ 0.70 x 10^6/µl serum vitamin B_{12} 516 $\pm$ 244 pg/ml, serum folate 7.3 $\pm$ 2.9 ng/ml, red cell folate 218 $\pm$ 109 ng/ml. With respect to the neurological status, 5 patients had neurological complications which were unnoticed by the patients: one patient had anosmia, one patient had mild ataxia, one patient had numbness due to peripheral polyneuropathy confirmed by nerve conduction studies, and 2 patients had mild orthostatic lightheadedness. All 5 patients had normal serum B_{12} and folate levels, but red cell folate levels were reduced (between 82-103 ng/ml). None of these 5 patients presented hematopoietic changes of folate or vitamin B_{12} deficiency like macrocytic anemia. Following folic acid therapy (5 mg o.d.), their symptoms improved progressively over 2 months, confirming that the neurological symptoms was due to folate deficiency.

Studies in the elderly revealed that low serum folate levels were observed in 5-19% of patients.[1,2] The incidence of folate deficiency in our series was 4.5%. It is difficult to compare these 2 incidences because of differences in demographic and nutritional factors.[2,6] Despite low serum folate levels in 5 of our patients none developed, macrocytic anemia which tend to confirm reports that, only a minority of elderly patients (23%) present with a mean cell volume (MCV) of $\geq$ 100 fl.[7,8] Although folate deficiency accounted for the neurological complications observed in our 5 patients, it is realized that measuring serum vitamin B_{12} is not the optimal diagnostic tool for diagnosing vitamin B_{12} deficiency. It is well established that vitamin B_{12} levels can be normal in patients with frank clinical signs and symptoms of vitamin B_{12} deficiency.[2] Measurements of the serum levels of the downstream metabolite homocysteine - which will be increased in vitamin B_{12} deficiency - would therefore probably be a more sensitive indicator.

So far we have not attempted exploring the cause of deficiency in our folate deficient patients. Folates are widely distributed in foods but there is mounting evidence that folate deficiencies are the result of long-standing suboptimal folate nutrition.[3] Impaired availability due to their lability under various food cooking and processing conditions is probably one of the contributing factors. In addition, folate deficiency is also associated with mutation leading to the thermolabile variant of N5,10 methyl-enetetrahydrofolate reductase, which is observed in about 10% of the general population.[9]

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Enquiry into the causes of misuse of antibiotics.

Sir,

Resistance to antibiotics is a daunting and complex problem for which over-liberal prescribing is a major factor, and restrictive use of antibiotics is an important means of the containing spread of resistance.[1] Misuse of antibiotics is usually considered to be the result of lack of knowledge and inappropriate attitude of the doctors towards the use of antibiotics. In this work, we have tried to look at certain aspects of the knowledge and attitude of the doctors towards using antibiotics, in the region of the district of Madinah, Saudi Arabia, with the intention of ascertaining whether the misuse of antibiotics is entirely and primarily related to the lack of knowledge and improper attitude amongst the doctors of this region. We formulated a questionnaire, bearing in mind the prevailing pattern of antibiotic use in this region; and sent this to the doctors for completion and return. The questionnaire was sent through the Family Medicine Department, at the Ministry of Health, in the District of Madinah, to a total number of 150 doctors, mostly working as general practitioners, in the Primary Health Care Centers. This study was started in July 1998. The questionnaire was designed to obtain information as follows: (A) Knowledge of the use of antibiotics in different clinical situations; (B) Concerns about the toxicity of antibiotics; (C) Sincerity to the patients in the use of antibiotics; (D) Foresight in the use of antibiotics; (E) Whether antibiotics are taken seriously by the doctors. and (F) Cost-consciousness. A total of 108 doctors returned the questionnaire, answered and completed and the results are summarized in Table 1. Seventy three percent of the doctors were Arab, and the remaining 23% non-Arab.

Emergence of resistance in pathogens to antimicrobials is a worldwide problem. *Staphylococcus*, a common and seriously infecting agent has the capability of developing resistance within a short period of time to the antimicrobials to which it initially succumbs; and currently vancomycin-resistant *staphylococcus* has been reported from several parts of the world. *Streptococcus pneumoniae*, the common bacteria responsible for community-acquired pneumonia, is also increasingly gaining resistance to penicillin, and even 3rd generation cephalosporins.[2] One of the important causes of this development of resistance is the indiscriminate use of antibiotics. Antibiotics are misused worldwide, and particularly so in the developing countries. Antibiotics are one of the common drugs that are prescribed by the doctors in Saudi Arabia. These were found to be the most prescribed drugs in the primary health care centers in southern Saudi Arabia,[3] and the 2nd most common drugs (56%) prescribed after analgesics and antipyretics (62%) in the Asir region.[4] It is also known that antibiotics are prescribed inappropriately in the hospital practice in the Kingdom.

Our study shows that the doctors working as general practitioners in the primary health care centers in the district of Madinah, have a satisfactory level of knowledge of when, and in what common clinical conditions antibiotics are to be prescribed. Also their attitude towards the use of antibiotics in most of the parameters is appropriate (Table 1). Therefore, if there is unnecessary overuse of antibiotics by the general practitioners in the primary health care centers in the Madinah region, as it apparently seems there is, then it is because of the fact that those doctors are not honest to themselves in prescribing antibiotics. What those doctors know and believe about the use of antibiotics, is not transmitted into their prescriptions. There may be some circumstantial pressure that forces them to deviate from their knowledge and convictions about the use of antibiotics. Excessive demands and impatience of the patients concerning their illness; and morbid fear amongst the expatriate doctors (almost all were expatriate) of the complaints from the patients against them to the health authority most likely exerts pressure on the integrity of the doctors; and as a

Table 1 - Knowledge and attitude of the Doctors towards the use of Antibiotics.

	Appropriate %	Inappropriate %	TOTAL Appropriate %	TOTAL Inappropriate %
(A) Knowledge of the use of antibiotics in different clinical situations	86	14	86	14
(B) Concerns about the toxicity of antibiotics				
Question 2	100	0	90	10
Question 3	80	20		
(C) Sincerity to the patients in the use of antibiotics				
Question 4	94	6	95	5
Question 5	100	0		
Question 6	91	9		
(D) Foresight in the use of antibiotics				
Question 7	95	5	70	30
Question 8	43	57		
Question 9	73	27		
(E) Whether antibiotics are taken seriously by the doctors				
Question 10	98	2	73	27
Question 11	75	25		
Question 12	46	57		
(F) Cost-consciousness				
Question 13	74	36	74	36

result they disregarded the norms that they are well aware of in the use of antibiotics.

Health educators should make an attempt at raising the awareness amongst the general public about the usefulness and importance of antibiotics; and the risks involved in its misuse. This will help reduce the burden of irrational demands concerning antibiotics upon the doctors. A more realistic and compassionate attitude of the health authority personnel towards the often-unbearable pressure under which the expatriate doctors have to work would certainly improve the situation.

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