# *Letters to the Editor*

## Viral Hemorrhagic Fever: Admission Policy For Hospitals in the Arabian Peninsula

*To the Editor:* Doctors working in the Arabian Peninsula should know that one form of viral hemorrhagic fever (VHF), i.e., Crimean-Congo hemorrhagic fever (C-CHF) occurs here. It has been reported from the United Arab Emirates,[1,2] Kuwait,[3] Saudi Arabia,[4-6] and Oman,[2,7] and it may occur in neighboring countries such as Yemen.

C-CHF is a viral zoonosis of small mammals and ground-feeding birds living in arid regions, the vectors being hard (ixodid) ticks, especially *Hyaloma* spp.[8] *Hyaloma* ticks can infect livestock (camel, cattle, goats, sheep, etc.), but infected animals are asymptomatic, and the presence of the virus in a new locality is only apparent when human infection occurs. This follows exposure to ticks, being present at the slaughtering or parturition of a viremic animal, or simply exposure to its fresh meat.[6] There is also a significant risk of nosocomial infection from patients with hemorrhagic complications.[1,9] Fortunately, even when the virus is widely endemic, human disease is sporadic and infrequent.[10] Thus doctors working in endemic areas are unlikely to encounter cases.

Another type of VHF, the dengue hemorrhagic fever (DHF), has occurred in the region. Primary dengue, caused by one of the four main serogroups, is usually a self-limiting febrile illness, but when infection with a second serogroup occurs DHF or dengue shock syndrome may ensue. In 1993, a fatal case of DHF occurred in a Saudi male in Jeddah, following the introduction of dengue to the region by an unidentified visitor.[4] Several hundred cases of dengue were diagnosed subsequently in the Western Province, but the outbreak was terminated by an effective public health campaign, which included control of *Aedes aegypti* mosquitos (the principal vectors of dengue), and no case has been reported since mid-1995. Nevertheless, imported dengue could be encountered in expatriates from countries where the disease is endemic.

Pilgrims coming to Saudi Arabia, including the one million or more attending the annual *Hajj*, create another potential source of importation of VHF, since many come from countries where various forms of VHF are endemic, e.g., Kenya (Yellow and Rift Valley fever, Ebola), Uganda (Marburg disease), the Sudan (Yellow and Rift Valley fever, Ebola), Zaire (Ebola), Nigeria (Lassa fever), India (Kyasanur Forest disease), and Southeast Asia (Dengue). Needless to say, the Saudi health authorities, alert to the the risk of epidemic disease in pilgrims, enforce stringent health regulations, and maintain constant surveillance on communicable diseases.

Since VHF exists in this region, a VHF admission policy is essential. This is because of the risk of nosocomial infection from direct or aerosol exposure to blood or blood-stained secretions from patients, and the high mortality rate, which may exceed 30%.[1,9] Most forms of VHF pose a similar risk, including that of aerosol infection in Lassa fever, Ebola, and Marburg disease, however, there is no risk of dengue or yellow fever, since they are spread by mosquitoes. C-CHF is suspected when fever and hemorrhagic features (e.g., epistaxis, hemoptysis, petechia and ecchymosis) develop in a patient who reports recent contact with livestock, or a visit to a rural area. Leukopenia, thrombocytopenia, which may be severe (<20,000 per cmm), impaired blood coagulation, and raised serum amino-aspartate transferase levels, are typically present. Any patient who presents with these features should be immediately isolated until the diagnosis is established.

Frequently, the diagnosis is only considered after admission, when the patient has already been treated for hours or days in an intensive care unit or open ward, and many staff members have been exposed to the risk of infection. Identification of these individuals, estimation of the degree of risk in each case, counselling and reassurance, and surveillance for a three-week period are required.

The recently revised WHO guidelines[11] offer valuable advice in the planning of a VHF hospital admission policy. The following are the key steps:

1. A line of command led by an appropriate senior doctor (e.g., the infectious diseases physician, the microbiologist, or the medical superintendent), is established to coordinate action.
2. A list of all staff members (with their home telephone numbers) who must be informed when a patient is admitted is prepared.
3. Two isolation rooms with reverse ventilation, for males and females, respectively, which can be made available for use at any time, are selected.
4. All patients with suspected VHF are isolated with barrier nursing when hemorrhagic features are present.[11] Patients are regarded as potential cases of C-CHF until the diagnosis is confirmed. An information sheet about C-CHF is prepared in advance for health personnel.
5. The laboratory Director is notified of the admission of a suspected case of C-CHF (the virus is a Class 4 pathogen).
6. The Ministry of Health must be notified immediately when VHF is suspected.

7. A local or overseas laboratory which can produce a rapid diagnostic service (serological screening for C-CHF, dengue, and Rift Valley fever) is identified.
8. A supply of ribavirin for emegency treatment of patients and health workers with significant exposure to C-CHF infection (or Lassa or Lantan fever),[9] is obtained. If this is not possible, a reliable emergency source of the drug is identified.

The establishment of a hospital admission policy along these lines can be devised within a relatively short time after a few meetings of responsible staff members. Its preparation and implementation will prevent the confusion and alarm that is otherwise inevitable when a patient with suspected VHF is admitted to a hospital unprepared for such an emergency.

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## Missed Odontoid Process Fracture In Children

*To the Editor*: We report four children with traumatic synchondritic slips treated conservatively and healed without complications, although three of the cases were misdiagnosed for a considerable period of time. The trauma to the cervical spine in adults most commonly involves its lower parts, but in children, although such lesions are rare, they are mostly found in the region of C1 and C2. Immediate reduction and mobilization by different methods are recommended.

The patients comprised two boys and two girls, between two and seven years of age. There were no neurological deficits in any of the patients, and no other associated injury was encountered. Each of the patients presented with painful torticollis and restricted neck movements, especially with extension. The delay in the diagnosis in three of the patients ranged from 21 to 70 days. Lateral radiographs of all four patients showed anterior displacement, and in cases of missed diagnosis callus formation was noticed. All the patients received conservative treatment in the form of halter traction in extension. This induced reasonable reduction in the case diagnosed on the day of the injury, but did not change the position in the cases that were diagnosed later. In these three cases, traction was continued until relief of torticollis and resumption of range of movements was achieved. Traction was followed by immobilization in hard cervical collar for 12 weeks following injury.

At follow-up, ranging from 10 months to two years, all the patients had satisfactory fusion with complete relief of pain and torticollis. Follow-up radiography showed remodelling with no ill effects on the appearance of the odontoid process.

In 1986, Dunn reported four cases of diagnosis missed for more than one week out of a total number of 128 adult cases, and considered this delay in diagnosis an indication for cervical fusion.[2] Sherk et al. reported 11 odontoid fractures at the Children's Hospital in Philadelphia over a 20-year period. They showed that children with odontoid fractures which are recognized and treated promptly usually do well, but they stressed reduction by different methods.[3]

In 1972, Griffiths showed good treatment results in his four cases by using skull traction in three patients, and Minerva jacket, followed by manipulation under anesthesia, in one patient.[4] In our study, the diagnoses in three of the four cases were missed for different periods of time. All the patients have done well, despite the absence

of reduction due to the delay in the three cases. Follow-up showed good results, and no effect on the appearance of the odontoid process. The authors do not underestimate the importance of reduction, but the favorable results that we achieved probably reflect the nature of this injury.

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## Maffucci's Syndrome

*To the Editor*: We have read with interest the recent case report of Desai et al., on Maffucci's syndrome.[1] We have also encountered a similar case with huge soft tissue abnormalities but proportionate to the osseous lesions of the leg and foot (Figures 1 and 2). References of the literature regarding Maffucci's syndrome should include references nos. 2-5, and also that of Mirra et al.,[6] which shows a nice image of Maffucci's syndrome.

Maffucci's syndrome represents a rare congenital long hereditary mesodermal dysplasia, manifested by multiple endochromas and soft tissue hemangiomas. Radiographic abnormalities are characteristic, consisting of typical central or eccentric radiolucent lesions containing a variable amount of calcifications and phleboliths within the affected tissue. Ollier disease may be diagnosed instead of Maffucci's syndrome until hemangiomas are discovered on physical examination. The radiographs reveal endochromas of virtually every bone, as well as soft tissue calcifications or phleboliths. The potential for both bone and soft tissue lesions to undergo sarcomatous transformation in this syndrome has been emphasized. Chondrosarcoma is the dominant malignant tumor encountered.[7]

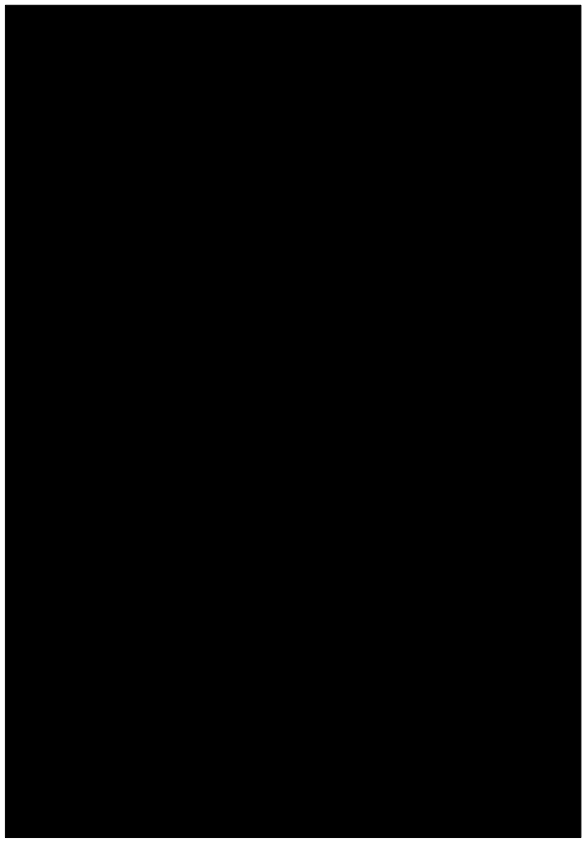

FIGURE 1. Large osseous lesions of left distal and proximal tibia and fibula with calcifications.

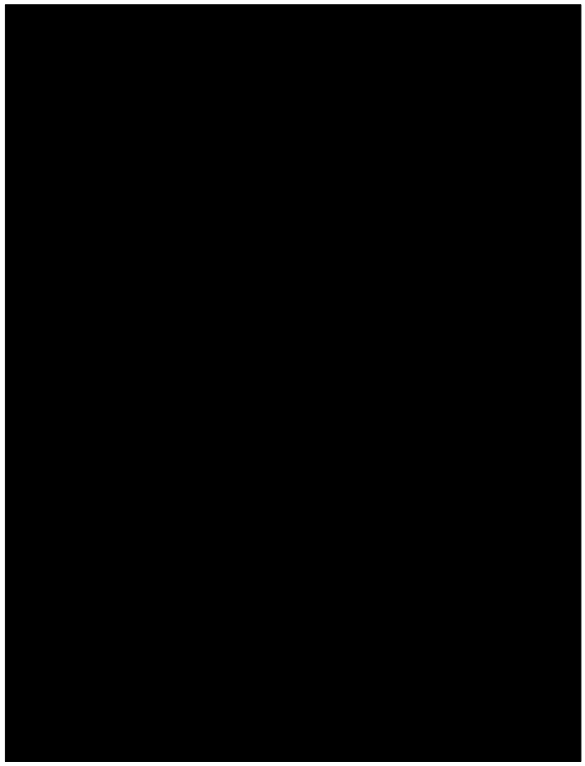

FIGURE 2. Huge soft tissue masses of toes with phleboliths.

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## Operative Cholangiography in Laparoscopic Cholecystectomy: Is it Essential?

*To the Editor*: Dr. Al-Qasabi et al.[1] aimed in their article to glorify endoscopic retrograde cholangiopancreatography (ERCP) at the expense of intraoperative cholangiography (IOC). In absence of a comparative group of patients who were subjected to IOC at the time of LC, using the same selection criteria, the authors cannot scientifically conclude that IOC is not essential, as the title of their paper implies.

Although I myself have adopted a similar policy to that reported by the authors, I felt that the paper has done IOC an injustice. Based on the available evidence, no one can deny the important role played by IOC in the prelaparoscopic era. While some surgeons advocate its use in selective cases, especially those with abnormal preoperative liver function test results (elevated bilirubin or alkaline phosphatase), multiple small gallstones and dilated cystic duct, or in cases with difficult ductal anatomy to avoid bile duct injury, others consider it unnecessary.[2] They dismiss its role in preventing CBD injury in the absence of conclusive evidence[3] and since injury is believed to occur before or as IOC is performed.[4,5] Furthermore, IOC is often associated with technical difficulties, its films are unsatisfactory for decision-making, and it has a 3% false-positive rate, causing unnecessary duct exploration.[6] Nevertheless, IOC remains of valuable use in cases with difficult anatomy and in centers where no ERCP facilities exist.

As laparoscopic IOC increases operating time and is technically demanding, especially in the hands of the inexperienced, many surgeons now prefer selective preoperative ERCP to detect and treat CBD stones endoscopically before LC. In the event of CBD stones declaring themselves after LC, endoscopic clearance is the treatment of first choice, with a 90% success rate.[7]

At Dammam Central Hospital, we adopted a selective policy for preoperative ERCP in patients with cholelithiasis, based on biochemical and radiological criteria.[8] By adopting these criteria, only 1.5% of patients presented with symptomatic CBD stones after LC, and these were mainly due to slipped rather than missed stones. Although ERCP is accurate in detecting CBD stones with reasonably low morbidity and mortality rates, it is somewhat invasive and therapeutic ERCP is not without complications. Such complications include duodenal perforation, bleeding, cholangitis and acute pancreatitis, most of which have been encountered by various authors. Moreover, the success rate is operator-dependent and related to the endoscopist's experience. A late complication of sphincterotomy that occurs secondary to duodenobiliary reflux in younger patients poses another cause for concern. Therefore, to reduce complications associated with ERCP, endoscopic balloon dilatation has been used,[9] offering a safer alternative with a high success rate. It also has the added advantage of preserving the function of the sphincter of Oddi, which recovers function after the procedure, preventing duodenobiliary reflux with its attendant risk of biliary sepsis, especially in younger patients.[9] At present, its use is limited to ductal stones not exceeding 10 mm and, therefore, mechanical lithotripsy is needed in more than 30% of cases.

The upsurge in ERCP in the laparoscopic era was associated with a large number of normal procedures, despite the adoption of selective criteria. This can be further reduced by use of intravenous cholangiography (IVC) as a screening test for ERCP,[10] bearing in mind the small risk of false-negative results and the greater workload it may add to a busy radiological department.[11] Another relatively noninvasive new imaging technique, magnetic resonance cholangiopancreatography (MRCP), has been introduced. It is hoped that its use will allow the selection of patients who require therapeutic ERCP intervention, thereby limiting the number of normal ERCP studies, which in the author's study was as high as 60% despite their selective criteria. However, MRCP is only diagnostic and available only in a limited number of hospitals in the Kingdom.

Failure to identify CBD stones before LC forces the surgeon to face the difficult task of deciding whether to convert to open method or to complete LC and later refer the patient for postoperative endoscopic duct clearance if stones are detected intraoperatively. The first option

underestimates the credibility of minimally invasive surgery, and the second carries a potential risk of ERCP failure and the need for another operation to explore CBD, with its attendant morbidity. This difficult decision is abolished if expertise and facilities for laparoscopic bile duct exploration are available. Laparoscopic bile duct exploration can be conducted either via the cystic duct (transcystic approach) or directly via the CBD. The transcystic route achieves 90% duct clearance.[2] It is recommended for small duct stones and does not usually need a T-tube placement. However, it is sometimes difficult to pass instruments down the spiral cystic duct, and the intrahepatic ducts are usually inaccessible. On the other hand, the direct duct exploration achieves 92% clearance[13] and is suitable for larger stones greater than 1 cm in diameter. Both routes offer a minimally invasive option for CBD clearance, with very low morbidity. The initial technical difficulties encountered are soon overcome with suitable equipment and increased expertise, and once the laparoscopic exploration is conducted on regular basis. Unfortunately, the sudden surge of ERCP application for duct clearance in the laparoscopic era meant confinement of laparoscopic duct exploration to certain laparoscopic centers and some overzealous laparoscopic surgeons, and so it is not widely available in every hospital performing LC. Therefore, every effort should be made to identify patients with CBD stones preoperatively and make sure the duct is cleared prior to LC. For the time being, and until laparoscopic duct exploration becomes universal, preoperative ERCP should be performed selectively in patients with suspected CBD stones before undergoing LC. Superselectivity to reduce the number of normal ERCPs can be achieved by performing IVC or MRCP. In this respect, ERCP is the method of choice for preoperative detection and treatment of ductal stones and does indeed, as the authors reported, obviate the need for IOC in absence of facilities and expertise for laparoscopic duct exploration. This policy certainly reduces the number of patients undergoing LC with undetectable CBD stones to less than 2%. Even if laparoscopic duct exploration becomes widespread, the demand for ERCP will continue, especially for patients with retained CBD stones that declare themselves postoperatively. Therefore, although I agree with the authors that IOC is not essential in LC, the manner in which they reached their conclusion was not a scientific one. Certain controversies concerning the two procedures are, therefore, highlighted.

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