

# Hepatitis C and the surgeon

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Throughout medical history, surgeons have worked with the risk of disease transfer from the patient under the knife. Many of these risks have been minimized or removed by the introduction of antibiotics and improved surgical techniques. However, blood-borne viruses remain a surgical risk. Originally, hepatitis A and B were the major dangers. Human immunodeficiency virus (HIV) and hepatitis C (originally non-A, non-B) were later brought to the public eye in 1981 and 1989, respectively. Hepatitis B carries the greatest risk of transmission, but the availability of a vaccine minimizes infection and allows for immunity if vaccination is maintained. Conversely, HIV is rarely transmitted, and if necessary exposure can be mitigated by an early, short course of antiviral triple therapy; however, HIV has received the lion's share of publicity in both the lay press and in the surgical literature.

It should be hepatitis C that most concerns the practising surgeon. Worldwide infection is estimated at 170 million cases,<sup>1</sup> which is 5 times greater than HIV prevalence, and it is calculated that about 1% of the Canadian population is infected.<sup>2</sup> Hepatitis C is frequent among intravenous drug abusers, but also is present in the immigrant population and in individuals with hemophilia. The reported prevalence may be an underestimate, as many cases can be asymptomatic. For a treating surgeon, information on a patient's infective status may not be available without the consent of the individual; infective status is even more uncertain in emergency care situations.

One of the groups at high risk is orthopedic surgeons. Apart from needles, they frequently use other sharp materials, such as wires, drills and saws. Furthermore, aerosolized blood in the surgical suite is common, and shards of bone can also produce injury. Double gloving, which is almost a standard procedure, only partially reduces the risk of skin puncture, and the use of Kevlar gloves is ineffective against punctures, as it resists only cutting injuries. The risk can be reduced with the establishment of protocols for the handling and exchange of sharp items among personnel, but there is no doubt that the greatest risk is in the operation field. These factors require us to be vigilant in the face of accidental injury.

The risk of hepatitis C exposure, even if recognized, unfortunately is frequently ignored on the assumption that the risk is low and that there is no existing prophylaxis. In actual fact, the risk of transmission from an infected person is much greater for hepatitis C, which has been reported to be as high as 10% but is more likely about 2%, than for HIV, which is reported to be about 0.3%.<sup>3</sup> The consequences of infection are compounded by the fact that both the early and later stages of the infection can be relatively asymptomatic. Despite the dangers of hepatitis C exposure and infection, few recommendations have been put forward for events after surgeon exposure. Protocols need to be established to deal with these inevitable exposures. An example of such a protocol would be, in the case of exposure, to check prior hepatitis C exposure of the health care worker with an immediate antibody assay. In addition, the existence of an adequate needle stick clinic should be assured in all institutions and include input from internists, hepatologists and infection disease specialists. Thereafter, a hepatitis C virus RNA (HCV RNA) qualitative test should be carried out at 6–8 weeks. Early confirmation of infection is essential, as treatment

started in the acute phase (up to 12 wk) has the greatest chance of success.

The virus exists in 6 major types. In Canada, 70% are classified as type 1, for which, unfortunately, treatment has the lowest chance of success. As hepatitis C is a notifiable disease, infected physicians will be informed by their professional colleges and hospital directors of service restrictions precluding them from performing high-risk procedures. These restrictions vary depending on practice, but essentially allow only minor soft tissue and endoscopic procedures to be performed. Restrictions remain in effect after successful treatment until a sustained virologic response is achieved (HCV RNA negative) at 3–6 months. Depending on the viral type, treatment may last from 24 to 48 weeks and usually consists of a regimen of pegylated interferon and ribavirin. A sustained virologic response cannot be assured, and the success rate can be as low as 40% depending on many factors, including age, delay in treatment, virus type and viral load.

The important question is what occurs if the physician remains HCV RNA positive after treatment. National guidelines universally recommend a continued restriction from high-risk surgery.<sup>4</sup> For many surgeons this will mean a major change in practice — something difficult, if not impossible, in mid-career. At present there is limited support for the individual in this situation. Payers have been reluctant to offer compensation. Some private disability insurers do not even recognize hepatitis C, unlike HIV and hepatitis B, as an occupational risk justifying support.

The actual frequency of HCV RNA positivity among surgeons is not known and is thus assumed to be negligible. A study, conducted anonymously by the Centers for Disease Control, of 3262 orthopedic surgeons who had no nonoccupational risk factors and attended the American

Academy of Orthopaedic Surgeons meeting in 1991 found the incidence of detectable virus to be 0.8%, but the incidence rose from 0% to 1.6% with increasing years in practice.<sup>5</sup> This suggests that there exists an undisclosed number of surgeons infected perhaps unknowingly in the course of their practice. This represents not only a long-term risk to these surgeons, but also a question of risk to our patients.

The actual extent of this risk, although probably low, is unknown and difficult to evaluate on account of the frequent lack of symptoms in infected individuals. Few cases of surgeon infection have been reported worldwide. Despite this, there have been moves by authorities to require regular screening of physicians in high-risk specialties. The effect that this may have on infected physicians would be considerable. Each one of us must be alert to any such suggestions and plan accordingly.

**Competing interests:** None declared.

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