

hydatid disease throughout the world) should await the outcome of careful long-term evaluation.

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(Drs. Sahin and Aksoy reply on behalf of their coauthors)

We share the objections of Jones and colleagues on the reliability and efficiency of PAIR.

We first started to apply the PAIR technique in 1992. Since then we have not experienced recurrence or new cysts in any of our patients; our prolonged prophylactic administration of albendazole may be the reason for this. It has been reported that in hydatid disease of the abdomen the recurrence rate ranges from 3% to 11% depending on the spread.<sup>1</sup> It is argued that such recurrence may appear within 3 to 4 years. However, in the early 1990s, we found widespread hydatidosis in the abdomen of one of our patients 2 years after spontaneous rupture of liver hydatid

cysts. On the basis of this experience we believe that recurrence may develop earlier than reported. We take utmost care to prevent peritoneal spread when the PAIR technique is used by giving albendazole prophylactically. Despite this, it is possible that recurrence may occur even earlier in our series.

It is true that a substantial proportion of liver hydatid cysts are connected with the biliary ducts. We generally used the PAIR method for types I and II cysts, according to the classification of Gharbi and associates<sup>2</sup> and did not use it in patients with cysts that connected with the biliary ducts. Some assert that 80% to 90% of all liver hydatid cysts connect with the biliary ducts.<sup>3</sup> We took this into account and used as the scolical agent silver nitrate solution, which has proven to be the least harmful to biliary ducts.<sup>4</sup> Serologic tests present problems for us. Initially we could use only skin tests. In our study we used the indirect hemagglutination test. We use mainly ultrasonography for follow-up, but in cases in which the diagnosis is complicated we use the enzyme-linked immunosorbent assay. We cannot use these tests exclusively because of the high cost and the varying results.

In our opinion, the most important treatment modality for cyst hydatid disease is surgery. However, PAIR is a method that can be used electively and applied in cases of recurrence in which abdominal "sticking" occurs, in cysts located near vital structures, in patients who cannot tolerate surgery and in appropriate (types I and II) cysts. PAIR is not suitable in the following: types III and IV cysts, and large cysts located peripherally in the liver. In the latter group, in which there is insufficient parenchyma around the cysts, the risk of spread is high and collapse of the cyst is inadequate.

We have not found any studies arguing that PAIR increases the rate of recurrence. In our opinion this method does not carry any greater

risks of spread and recurrence than surgery.

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## Ecthyma gangrenosum

The case of ecthyma gangrenosum described in the October issue of the Surgical Images section (*Can J Surg* 2001;44[5]:233) by Kao and associates was both interesting and challenging.

I have adopted, as have most of us dealing with similar cases, a very aggressive approach to this problem, including repeat extensive surgical débridement and intravenous antibiotic and fluid challenge. I have also been using hyperbaric oxygen therapy, which is not part of the multidisciplinary approach to this very frustrating clinical problem.

Have the authors considered using hyperbaric oxygen therapy?

**Hamid Nasser, MD**

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(Dr. Gan replies on behalf of his coauthors)

Dr. Nasser's question is a good one, as our armamentarium in

the treatment of ecthyma gangrenosum is relatively small and the death rate extremely high. In the case we described, we did not consider hyperbaric oxygen (HBO) therapy, although perhaps one could find some argument in the literature to support such use. For example, in a recent animal model study,<sup>1</sup> it was shown that HBO may be of benefit in the treatment of *Pseudomonas aeruginosa* infections. Similarly, in an in vitro study,<sup>2</sup> HBO seemed to increase the effects of antibiotic administration on *P. aeruginosa* growth. Nonetheless, there are no well-executed clinical studies showing the benefits of HBO in human *P. aeruginosa* infection. If HBO in the treatment of this severe illness has now become the standard of care in your institution, I hope that you will review your results and that we all may look forward to a more clear answer to the question as to whether HBO may be of benefit in cases of ecthyma gangrenosum.

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**Surgical residency programs**

We read with interest the Editor's View of April 2001 (*Can J Surg* 2001;44[2]:84) on the length of residency programs and agree with most remarks concerning the consequences of the introduction of new technology and techniques and the potential need to expand the clinical curriculum in general surgery. However, we feel that a number of comments concerning cardiac surgery are warranted.

We disagree with the implication that since the cardiovascular and thoracic surgery (CVT) program has been split into 3 distinct residency programs (6 yr for the cardiac surgery program), the joint program was insufficient to cover the required curriculum. Candidates for the CVT residency program entered having completed only the general surgery program, which gave them judgement, depth, solid psychomotor ability and a strong foundation of surgical principles: all the skills of an independent surgical consultant (i.e., a fully fledged specialist). The residents then had 2 to 3 years to acquire the specifics of each CVT branch, which was usually enough, considering the high level of competence attained before entering the CVT program.

The new 6-year training program in cardiac surgery adequately covers the curriculum required by the Royal College of Physicians and Surgeons of Canada and is sufficient for most residents to acquire adequate clinical skills to be a consultant in the specialty. We believe, however, that a number of them would probably benefit from the broad-based skills taught in the general surgery residency program.

The development of academic surgeons most likely requires training above and beyond specialty certification, such as the 2 to 3 years of clinical or research fellowship (MSc or PhD), which is a recruitment requirement in the Department of Surgery at the Université de Montréal.

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**The pendulum**

Since 1970 when I developed instruments and published methods for suturing and tying in operative laparoscopy,<sup>1</sup> the pendulum may not have swung much further. Clips, lasers and disposable instruments have aborted the forward swing. While applying this new technique to every nook and cranny of the human body so as to claim to be the first to do so, the basic techniques have not improved significantly, even when aided by the video screen. Clip-gun surgery without suturing and tying?

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