

Correspondence

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EVALUATING LAPAROSCOPIC SKILLS

In the paper by Derossis and associates entitled "Evaluation of laparoscopic skills: a 2-year follow-up during residency training" (*Can J Surg* 1999;42[4]:293-6), we disagree with the assertion that "this simulator is a valuable teaching tool for training and evaluation of basic laparoscopic tasks in laparoscopic surgery." This conclusion does not appear to be substantiated by the authors' methods.

Finding a linear correlation between performance scores and level of training only serves to confirm that residents coincidentally become more dexterous at artificial exercises as they advance in their surgical training. It does not demonstrate construct validity of the measure but rather serves only to show convergence between simulator scores and year of residency. Furthermore, the authors do not indicate how much simulator practice time was accumulated by residents in the 2-year interval, a factor that could be singly responsible for the improved scores. Since all residents presumably complete a full 5-year program of training, to be of true value in assessing surgical skills this measure should be able to discriminate among residents, in the same year of training, deemed strongly and poorly competent by other means.

We further contend that to establish this simulator as a valuable training instrument requires evidence of improved clinical surgical skill that correlates with practice time on the training device.

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Drs. Fried and Derossis reply

We agree in part with the criticism of Schlachta and colleagues that our conclusion that the simulator we used "is a valuable tool for training and evaluation of basic tasks in laparoscopic surgery" is not substantiated by the methods used. However, our article is only one of several that have been presented at national and international peer-reviewed meetings and have been published or accepted for publication in this and other peer-reviewed journals.¹⁻³

Validity is a matter of degree and does not exist on an all-or-none basis. Finding a significant correlation between performance scores and level of training from junior to senior residents suggests a degree of construct validity. Further, in this pilot study, where residents were followed through their training, residents' scores and the total score increased as they underwent more training in 2 out of 3 tasks. Practice effects could confound such results; however, these residents were only evaluated at 2 points in time and had no practice on the simulator in the interim. The original 7 inanimate tasks developed¹ were modelled after fundamental laparoscopic techniques rather than isolated psychomotor skills, thus adding face validity. Face validity was further ensured by consensus of more than 20 well-known advanced laparoscopic surgeons that these tasks were meaningful representations of components of laparoscopic surgery. In another study² we found that residents who practised in this inanimate model performed better in a live animal model and acquired skill more quickly than a peer group at the same PGY3 level of training who had not practised in the inanimate model. The scores in the animate model for the group that practised were also superior to those of the group without practice,³ and the scores in the inanimate model corre-

lated significantly with analogous skills measured in the live animal in the operating room.² All of these data support the validity of the inanimate system for measuring laparoscopic skills.

We agree that this model will require further validation by ultimately correlating performance in the model with level of surgical skill in the operating room. At this point there is no measure of skill in the operating room that can act as the "gold standard." We are in the process of conducting a large multicentre study to test the reliability and validity of such a scoring system.

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References

1. Derossis AM, Fried GM, Abrahamowicz M, Sigman HH, Barkun JS, Meakins JL. Development of a model for training and evaluation of laparoscopic skills. *Am J Surg* 1998;175:482-7.
2. Fried GM, Bothwell J, Derossis AM, Sigman HH. Comparison of laparoscopic performance in vivo with performance measured in a laparoscopic simulator. *Surg Endosc* (in press)
3. Derossis AM, Bothwell J, Sigman HH, Fried GM. The effect of practice on performance in a laparoscopic simulator. *Surg Endosc* 1998;12:1117-20.

SLIPPED CAPITAL FEMORAL EPIPHYSIS

In the April 1999 issue of the *Journal* (pages 145 to 148), Drs. Marx and Wright reported on an unusual case of slipped capital femoral epiphysis after septic arthritis of the hip in an adolescent boy. Although it is certainly most unusual to see these conditions simultaneously in an ado-

Notices

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Interactive surgical symposium

The Mayo Clinic is sponsoring the Mayo Interactive Surgical Symposium from Feb. 17 to 19, 2000, at Marriott's Camelback Inn Resort, Golf Club & Spa, 5402 East Lincoln Dr., Scottsdale AZ 85253. For further information contact Kristin Eberhard, Mayo Clinic Scottsdale, 13400 East Shea Blvd., Scottsdale AZ 85259; tel 480 301-7552, fax 480 301-8323.

Urogynecology

The ninth annual course on urogynecology and disorders of the female pelvic floor, sponsored by the Mayo Clinic Scottsdale, will be held Apr. 6 to 8, 2000, at the Royal Palms Hotel & Casitas, 5200 East Camelback Rd., Phoenix, Ariz. The course director is Dr. Jeffrey L. Cornella. The course will provide an understanding of the anatomy and pathophysiology of the pelvic floor essential for the prudent treatment of associated disorders. Credits: AMA Category I and ACOG. For further information contact Maree Stone, CME Department, Mayo Clinic Scottsdale, 13400 East Shea Blvd., Scottsdale AZ 85259; tel 480 301-7564, fax 480 301-8323.

Foot and ankle symposium

The Fourth Biennial Foot & Ankle Symposium, sponsored by the Department of Surgery, University of Toronto, will be held on Apr. 8 and 9, 2000, at the Medical Sciences Building, Auditorium, University of Toronto, 1 King's College Circle, Toronto. Credits: MOCOMP, Type II, AMA Category I. For further information contact Continuing Education, Faculty of Medicine, University of Toronto, Rm. 121, 150 College St., Toronto ON M5S 3E2; tel 416 978-2719, fax 416 971-2200, a.lind@utoronto.ca

lescent, I take exception to certain aspects of the treatment. The authors were presented with a child who had a late diagnosis of septic arthritis. I question their decision to close the wound, remove the suction drain after 2 days and treat with only a 6-day course of antibiotics intravenously. Although this treatment may be appropriate after prompt diagnosis and management of acute septic arthritis, I think it is unwise to manage delayed infections in this fashion. A more aggressive, yet conservative, approach of leaving the wound open over drains and then returning the patient to the operating room 24 to 48 hours later for a second look and repeat drainage followed by a 4- to 6-week course of antibiotics intravenously might have prevented the recurrent infection that this boy suffered 2 weeks after discharge. It is not clear whether the slipped capital femoral epiphysis was related to the original infection or to insufficient treatment of the infection.

Regardless of the slipped capital femoral epiphysis, which certainly makes for an interesting case report, I believe that most pediatric orthopedists would agree that treatment of a septic hip presenting relatively late should be different from the treatment of a septic hip that is promptly diagnosed. Indeed, I have observed that septic hips in adolescents tend to be associated with a worse prognosis and present in a more delayed fashion than those in younger children.

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Dr. Wright replies

Dr. Herzenberg has suggested that a return to the operating room and a 4- to 6-week course of antibiotics intravenously would have prevented the recurrent infection in the boy reported in our article (*Can J Surg* 1999;42[2]:145-8). This boy was initially treated with an arthrotomy, and a window was made in the capsule of the hip. Only the subcutaneous tissues were closed, and a closed suction drainage tube was placed in the hip to drain recurrent collections. We generally judge the duration of intravenous antibiotic therapy on clinical grounds, and the patient's clinical response. We do not favour the prolonged use of antibiotics intravenously for soft-tissue infections, such as joint arthritis, believing that sufficient oral doses in compliant patients are equally effective.

Almost immediately postoperatively, this boy was weight bearing. His fever resolved and his range of motion improved. In retrospect, in this particular patient, perhaps a longer course of intravenous therapy might have been helpful, but at the time he seemed to have responded well. Although septic arthritis in older children is substantially more complicated and treatment is more difficult than in younger children with a short course, it is uncertain whether a return to the operating room or a longer course of intravenous antibiotics would have made any difference in this boy's outcome.

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