mmHg at the beginning of the procedure to an average of 8.1 ± 4.2 mmHg. In 28 patients (45.9%), intraoperative phlebotomy and CS were used either together or separately. The median for transfusion of all blood products for the 72 hr postoperatively was zero. There were neither cardiac complications nor any neurological complications. There was no intraoperative death nor any death in the 30-day period postoperatively. The one-year survival rate was 91.4%.

The avoidance of plasma transfusion was associated with a decrease in RBC transfusion during liver transplantation. Previous reports[5] indicating that it is neither useful nor necessary to correct coagulation defects with plasma transfusions prior to liver transplantation are further corroborated by this prospective survey. Our data indicate that this novel practice does not result in any deleterious effect.

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The effects of prostaglandin E_1 or oral clonidine premedication on blood loss during paranasal sinus surgery

To the Editor:

In order to reduce blood loss during radical operation of paranasal sinus surgery, we conducted a study approved by our Institutional Review Board, comparing mild hypotensive anesthesia induced by prostaglandin E_1 (PGE_1 group), normotensive anesthesia with oral clonidine premedication (clonidine group) and normotensive anesthesia (control group). Twenty-four consenting ASA physical status I patients were randomly allocated to the three groups. The clonidine group received 5 $\mu g \cdot kg^{-1}$ of clonidine as oral premedication and the other groups received 10 mg of oral diazepam.

General anesthesia was maintained with isoflurane or sevoflurane in oxygen and 66% nitrous oxide. The target range of mean arterial blood pressure was 80 ± 10 mmHg in the control and clonidine groups, and 70 ± 10 mmHg in the PGE_1 group. Mean arterial blood pressure (MABP) was controlled by volatile anesthetics in the control and clonidine groups, whereas in the PGE_1 group, MABP was controlled primarily by PGE_1 at 0.05 to 0.2 $\mu g \cdot kg \cdot^{-1} min^{-1}$ and secondarily by volatile anesthetics. The end-tidal concentration of volatile anesthetics was maintained between 0.7 to 1.5 minimum alveolar concentration (MAC) for the control and PGE_1 groups, but between 0.4 to 0.8 MAC for the clonidine group because of clonidine's anesthetic sparing effect.[1] All patients were placed in a 5°reverse Trendelenburg's position and the same two surgeons performed all of the operations.

TABLE Intraoperative variables

	Control (n = 8)	*PGE_1 (n = 8)*	*Clonidine (n = 8)*
Mean blood pressure (mmHg)			
preinduction	92 ± 16	90 ± 12	91 ± 16
during surgery	78 ± 9	69 ± 4*	77 ± 10
Heart rate (beats·min^{-1})			
preinduction	73 ± 11	70 ± 13	62 ± 7*
during surgery	86 ± 15	106 ± 21*	67 ± 8*†
End-tidal inhaled anesthetics (MAC)	1.00 ± 0.28	0.97 ± 0.19	0.67 ± 0.07*†
Infused volume (mL)	1031 ± 412	1000 ± 198	893 ± 360
Urine output (mL)	256 ± 101	183 ± 137	99 ± 104*
Duration of surgery (min)	77 ± 15	74 ± 12	67 ± 26
Blood loss (mL)	432 ± 225	343 ± 92	206 ± 106*

Data are expressed as mean ± SD. PGE_1 = protaglandin E_1; MAC = minimum alveolar concentration.* $P < 0.05$ *vs* control group; † $P < 0.05$ *vs* PGE_1 group.

The results are shown in the Table. There were no significant differences in patient demographics (age, gender, weight and height) between groups. The average administration of PGE_1 in the operation was 0.13 ± 0.057 $\mu g \cdot kg \cdot^{-1} min^{-1}$. Blood loss in the clonidine group was significantly lower than in the control group.

This study demonstrates that oral premedication of 5 μg of clonidine reduced intraoperative blood loss. Clonidine constricts peripheral blood vessels and reduces nasal mucous blood flow,[2,3] which accounts for the reduction of blood loss. However, the clonidine group received a lower concentration of volatile anesthetics than either the PGE_1 or control groups. As volatile anesthetics have a vasodilatory effect, it is possible that the lower concentration of volatile anesthetics in the clonidine group contributed to the reduction of blood loss. Although precise mechanisms are not clear, 5 $\mu g \cdot kg^{-1}$ of oral clonidine premedication reduced blood loss during radical operation of paranasal sinus surgery without associated hypotension.

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Supervising fellows and residents in pediatric anesthesia

To the Editor:
We present the details of a survey of Canadian pediatric anesthesiologists conducted with the purpose of understanding current practices in supervising fellows and residents. Pediatric patients may comprise 10% to 15% of all surgical patients in Canada.[1,2] Provision of anesthesia care to children is recognized to require special training and expertise.[3] At present, learning objectives for the requisite three months of training in pediatric anesthesia are determined at the program level, as there is no national curriculum, nor defined competency outcomes.[4]

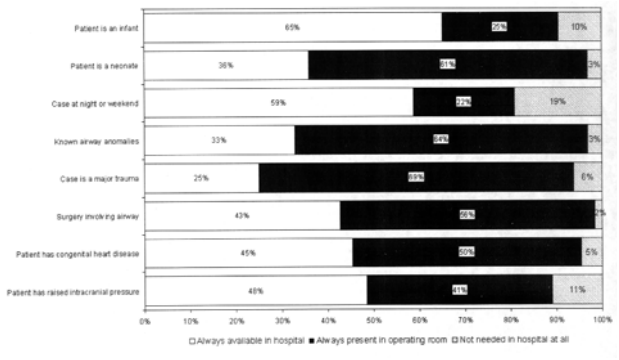

FIGURE Opinion of respondents regarding proximity of supervisor of clinical fellows.

One hundred and eighty-seven Canadian pediatric anesthesiologists were invited to complete a web survey and 67 completed surveys were returned (35.1% response). For most clinical scenarios presented in the survey, a majority (50%–69%) felt it was necessary to be in the operating room even while supervising a fellow. Each case was judged independently. The respondents would be present in the operating room most often where a fellow encountered a major trauma or a known airway anomaly (Figure). For these more complicated cases, very few (4% on average) indicated that the supervising anesthesiologist was not needed in the hospital at all. Even for uncomplicated cases outside of regular hours, in-hospital presence was viewed as unnecessary by only 19%.

The Canadian Anesthesiologists' Society recognizes residents as medical practitioners that may, within the limits of their training program, administer anesthetics without direct supervision, provided they are judged competent and capable by their supervising anesthetic staff.[5] In our survey, the number of respondents that were unwilling to allow residents (under any condition) to perform independent anesthesia in a remote location was 75%, to perform induction in an infant with pyloric stenosis was 48% and to perform a thoracic epidural was 24%. In deciding whether to allow residents to attempt these cases, respondents generally first considered a resident's pediatric anesthesia experience and then considered patient factors (age, weight and co-morbidities).