CORRESPONDENCE

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Discrepancy between Thromboelastography and Prothrombin Time

To the Editor—The thromboelastograph, a standard monitor used during orthotopic liver transplantation and cardiopulmonary bypass, is being used in other perioperative situations. We present a case of the thromboelastograph being used to assess coagulation in a patient when an isolated hemostatic laboratory abnormality had led to prior cancellation of surgery.

A 57-yr-old man who sustained multiple injuries in a motor vehicle accident required ventilation of his lungs and monitoring of intracranial pressure. Semielective internal fixation of the tibia and reduction of mandibular and zygomatic fractures had been postponed three times because of a prolonged prothrombin time (PT). Initial thromboplastin times, platelet count, indexes of fibrinolysis and factor concentrations (apart from a marginal decrease in factor VII) were normal, there was no evidence of liver disease, and treatment with fresh-frozen plasma (4 units) and vitamin K (10 mg) had not corrected the PT. Hemostatic consultation could not explain the prolonged PT, as laboratory error, lupus anticoagulant, and factor VII inhibitors (no correction of the PT with a 1 x 1 mix) had been excluded as potential causes.

Five days after injury and 48 h after the last fresh-frozen plasma administration, we were approached to perform routine thromboelastographies with simultaneously drawn PTs of 16.6 and 17.4 s, respectively (normal range 11.1–13.1 s). Table 1 shows the thromboelastograph indexes with the short R and K times and increased angle indicating no in vitro abnormalities of coagulation factor function or platelet-fibrin interaction, and increased maximum amplitude, confirming adequate platelet function. This evidence of adequate coagulation (in the presence of the prolonged PT) was the conclusive information leading to rescheduling of surgery, which proceeded uneventfully.

Table 1. Thromboelastograph Data

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>R time (s)</td>
<td>7.5</td>
<td>8.5</td>
<td>10–14</td>
</tr>
<tr>
<td>K time (s)</td>
<td>2.0</td>
<td>2.0</td>
<td>3–6</td>
</tr>
<tr>
<td>Angle (°)</td>
<td>78</td>
<td>79</td>
<td>54–67</td>
</tr>
<tr>
<td>Maximum amplitude (mm)</td>
<td>85.5</td>
<td>87.0</td>
<td>59–68</td>
</tr>
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</table>

Earlier application of the thromboelastograph in this patient with an isolated, unexplained, and clinically misleading PT prolongation would have prevented unnecessary postponement of surgery and may have prevented fresh-frozen plasma and vitamin K administration in the face of clinically normal hemostasis. However, because there was no thromboelastograph trace previous to the fresh-frozen plasma, influence of fresh-frozen plasma on the thromboelastograph cannot be excluded.

This report accentuates the expanding role of the thromboelastograph in perioperative coagulation assessment, especially in patients with isolated, abnormal hemostatic laboratory parameters.

Evan G. Pivalizza, M.B.Ch.B., F.F.A.
Assistant Professor
Kimberly L. Henderson, M.D.
Assistant Professor
Alanna L. Craig, M.D.
Resident
Department of Anesthesiology
University of Texas Medical School
6431 Fannin
Houston, Texas 77030
Electronic mail: epivaliz@anes1.med.uth.tmc.edu

References


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To the Editor—et al. of a laryngeal mask circuit by two right ports. This is a useful method of tracheal but the tube is a very gas flow secondary to airway intubation in the LMA tuberc them that the airway flow is high. We would suggest that offers that gas flow.

The prototype standard LMA with an aspect of the main mask is advisable. The mask duct is designed to extend posteriorly, the right port of the standard device, with the device endotracheal scope, the fiberoptic and the additional tube all in the upper airway intubator. The right port is the additional tube for the main tube.

Gas flows for the #2.5 LMA using the set at a tidal volume of 400 ml and the waveform of a 20-kg child at a 1-min-1 and the port scope (outer diameter of 9.5 mm) is free of the larynx. A dedicated tubing is available for the solution to the port. The DL-MA nor the #2.5 LMA allows the solution to the port.