immediately preoperatively. Blood urea nitrogen values rose more slowly in the experimental animals. No differences in times of rejection (six to ten days) were apparent in the experimental and the control groups.

The idea that halothane and nitrous oxide might affect the rejection response was based on the fact that both agents depress lymphocyte counts and antibody production. However, it does not necessarily follow that tissue immunity will be suppressed. A poor correlation between serum antibody response and tissue transplant rejection has been shown in rats and man. Our experiences with transplants in rats and dogs appear to bear this out. In addition, a recent report by Simmons et al. suggests that the immunosuppressant action of antilymphocyte serum can be distinguished from its ability to induce lymphopenia. Thus, the situation is considerably more complicated than might be thought at first glance.

Transplant therapy with anesthetic agents as immunosuppressants could still be a fertile area of endeavor for those interested in it. We have presented these preliminary data only to point out our lack of success in such research. We believe that more information concerning the actions of anesthetics and the basic processes involved in transplant rejection is needed before rewarding experiments can be done.

REFERENCES

A New Use for the Block-Aid Monitor

BALLARD D. WRIGHT, CAPT., USAF MC

The use of a nerve stimulator to facilitate regional nerve-block techniques has been proposed. Such instruments are commercially available; however, the cost may be prohibitive for the individual anesthesiologist. Modification of the Block-Aid Monitor can be accomplished easily and will provide a completely satisfactory tool. This instrument is presently in use in many anesthesiology departments.

Two 12-inch lengths of #20 plastic insulated (electronic hookup) wire are needed. An Eyenard adapter (catheter-to-Luer-Lok syringe) is soldered to each end of one of the wires. The second wire has an Eyenard adapter attached to one end and an alligator clip at its other end. The adapter easily engages the Banana plugs of the Block-Aid Monitor. The remaining adapter accepts a #25-gauge needle which is placed subcutaneously as the ground electrode. The alligator clamp attaches to a selected exploring needle (preferably insulated except at the tip) or the metal tip of the barrel of a Luer-Lok Syringe.
Fig. 1. Clinical use of the monitor as a nerve stimulator for supraclavicular brachial plexus block.

METHOD

The Monitor is switched to the tetanus position and turned on. The voltage selector switch is turned about midway. Stimulation of a mixed motor sensory nerve will produce paresthesias about 1 cm. from the exploring needle. If this voltage produces discomfort it is reduced and the needle advanced further. Proximity to the nerve will produce a stronger paresthesia; if the needle is positioned wrong, the paresthesia will become weaker. Motor fibers are stimulated at a lower threshold than sensory fibers to allow identification of the correct nerve at a voltage that produces little or no discomfort.

CLINICAL TRIALS

The Block-Aid Monitor has been used in the following numbers and types of nerve blocks:

<table>
<thead>
<tr>
<th>Paravertebral somatic</th>
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<tbody>
<tr>
<td>Thoracic (local anesthetics)</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>(destructive)</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Lumbar</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Cervical</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Supraclavicular</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Axillary</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sciatic</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Femoral</td>
<td>5</td>
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</tbody>
</table>

The technique allows positive identification of intercostal nerves in paravertebral blocks. The paresthesia produced travels from midline dorsal to midline anterior like an electric shock over the dermatome of the nerve. Stimulation of the pleura by the current produces a knifelike pain straight through the chest. This allows withdrawal and repositioning of the needle before pleural puncture occurs. Stimulation of the periosteum is painful and accurately located by the patient. Precise localization is obviously necessary to accomplish destructive blocks.

The stimulation of the motor component of mixed nerves enables the anesthesiologist to identify the sensory nerve and establish blockade in the noncommunicative patient. This has proven invaluable, for example, in an intubated patient with a full stomach who required surgery of an extremity. Its use in a senile patient on anticoagulants who required sympathetic blockade of a lower limb allowed easy and repeated sciatic nerve blocks. Advantages of the technique in the psychotic, comatose or stuporous patient are obvious.

REFERENCES