

A New Device for Pressure Algesimetry

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The production of pain by graded pressure on the periosteum through the skin has been used on the forehead¹ and subcutaneous surface of the tibia.^{2,3,4} Although this method is used extensively, its sensitivity and accuracy are uncertain.⁵ At present all pressure algometers incorporate a spring-loaded plunger enclosed in a cylinder with a calibrated scale. To reduce observer bias, a maximum pressure register is often added to enable the observer to ignore the scale during each test.² A device was constructed utilizing strain gauges to reduce bias and to improve accuracy where multiple test readings were performed.

The device consists of a wooden handle fixed to a strip of aluminum (fig. 1). Strain gauges are mounted on each side of this strip.

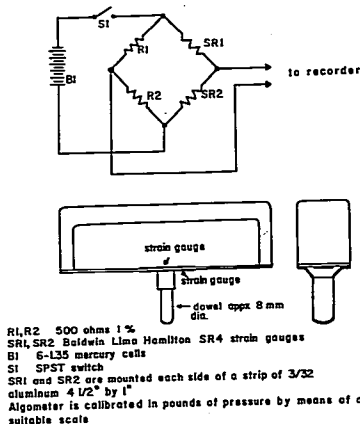


FIG. 1. Diagram of device.

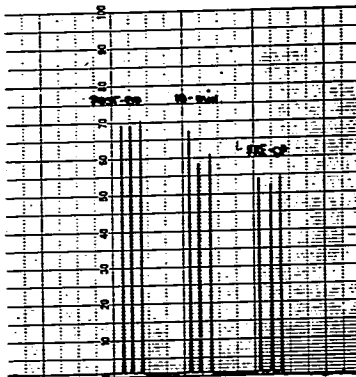


FIG. 2. Recordings made at test and checked against calibration scale.

A wooden dowel is attached to the aluminum strip by means of an aluminum bridge in order not to interfere with the strain gauge (see side view). The algometer is connected to a suitable electronic recorder and calibrated in pounds of pressure by means of a scale. A graph is plotted as a reference standard against which all future measurements are made. The device is easily rechecked at intervals by means of a scale.

This algometer has the advantage of completely eliminating observer bias because the recording device can be placed out of the tester's sight. Movement of the plunger is not discernible, and therefore, visible indicators of pressure change are eliminated. Results (fig. 2) can be computed accurately from the graph after the test period. The testing is completed rapidly and has a high degree of accuracy.

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Tabulation of Anesthetic Data: An Improved System

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To date, a comprehensive, generally acceptable system which will produce accurate anesthetic data has not been developed.¹⁻¹⁰ For many anesthesiologists, some sort of record keeping is a "necessary evil"; therefore, a system which will produce accurate, reliable statistics, yet conserve the anesthesiologist's time and provide an incentive to keep pertinent data is continually being sought. Data processing through a computer-oriented approach is the only practical solution, and the anesthetic record is the essential ingredient.

A new anesthetic record has been developed which: (1) can be coded by the anesthetist (physician, nurse, etc.); (2) is flexible, open-ended and adaptable to all types of anesthetic practice; (3) can be employed to compare data from many institutions; (4) improve record keeping; (5) provides for comparison of data; and (6) reduces the amount of space necessary for storage of records. The record is an integral part of a computer-oriented system for processing anesthetic records. The system has been researched since June 1964. From June 1966 it has been our method of tabulating anesthetic data.

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The record presented here is similar to those presently employed by most anesthetists. However, areas for entering data are placed in specific locations. In addition, other boxes for coding are available if the anesthetist desires to use them and subject his material to analysis at any future date. The record is not complex; it is designed specifically for computer analysis, and all data may be transferred directly to 80-column computer cards. The categories are rigidly defined by a dictionary of terms, yet open-ended in all categories, that is, multipurpose-oriented. The record may be used for all age groups, for surgical and obstetrical procedures as well as therapeutic and diagnostic blocks, regardless of whether general or regional anesthetic methods are selected.

The record is printed on three sheets and a cardboard. The first sheet is used for physician billing. The second sheet is the same as the front of the cardboard; when completed at the end of a procedure, it is placed in the patient's chart (fig. 1). The third sheet is designed to contain anesthetic and surgical data necessary to make hospital charges for material. It is completed by the operating room supervisor and sent to the hospital business office for posting on the patient's bill. The first and second sheets may vary, depending on the type of anesthetic practice and hospital requirements for billing of material charges. The cardboard record, which must be standard to accomplish its purpose, is kept