50 Years Ago in CORR

A Sterilizable Container for Special Instruments and Internal Fixation Apparatus for Operating-Room Orthopaedic Surgery Procedures

William Compere Basom MD CORR 1959;13:327–328

We frequently take for granted commonplace procedures that at an earlier time reflected a novel concept. A case in point is the manner in which we use surgical instruments. In the days before asepsis, morbidity and mortality of major surgery was very high. After the introduction of aseptic techniques by Lister in the 1860s [3–6], operating room practices slowly evolved over the decades. By the late 1800s the concept of sterilization by heat (steam or boiling water), rather than carbolic acid, had been

established. According to Pilcher [7], Champoniere at the Hôpital Saint Louis in Paris had, by 1890, established a remarkable record: “As testimony that he can speak with authority on the subject, he points to his own record, achieved, apparently, in the most unfavorable surroundings—132 abdominal sections, with but 10 deaths, 237 other major operations, with no deaths. His work is carried on without suppuration.” (It is interesting to note the writer believed only 10 deaths was remarkable.) Champoniere believed sterilization of instruments

should be performed only in a kettle without running water (“self feeding”), since the latter might cool the temperatures as cooler inflowing water mixed with the hot. He also believed the instruments should be kept in the room: “The instruments should be kept in a case in the room. He cannot comprehend how, under pretext of promoting the purity of the room, they should be kept out. To remove them complicates the preparations for an operation, and makes difficult the desired surveillance over them.” However, despite apparently initial

Fig. 1 Showing contents of box arranged for display. (Reprinted with permission and ©Lippincott Williams and Wilkins, from Basom, WC. A Sterilizable Container for Special Instruments and Internal Fixation Apparatus for Operating-Room Orthopaedic Surgery Procedures. *Clin Orthop Relat Res.* 1959;13:327–328.)

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sterilization by heat, during the surgery all instruments were kept in antiseptic solutions (not specified): “For holding the instruments, a metallic table is used, into which are fitted four movable metal basins. These contain the solutions into which the instruments

are plunged, and remain convenient to the surgeon’s hand. It is moved about easily, and no second person to hand the instruments is required. Another and deeper basin, also supported on a framework, is used for holding a stronger antiseptic solution, in which

the instruments are immersed for a time before being placed in the basins for the use of the surgeon.” (This was evidently prior to the introduction of gloves, as they were not mentioned.) Another description of European operating rooms suggests

Fig. 2 Box with its contents. (Reprinted with permission and ©Lippincott Williams and Wilkins, from Basom, WC. A Sterilizable Container for Special Instruments and Internal Fixation Apparatus for Operating-Room Orthopaedic Surgery Procedures. *Clin Orthop Relat Res.* 1959;13:327–328.)

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some individuals used glass trays for sterilized instruments [2].

The concept of discrete sets of instruments for specific operations was evidently not developed until much later. Instruments and implants were typically selected individually for given cases. Basom, in 1959, described a sterilizable instrument tray with individual compartments containing all necessary parts required for internal fixation [1] (Figs. 1 and 2). The main stainless steel case was perforated to allow penetration of heat or steam. Having individual compartments for the instruments and implants easily let the nurses ensure all parts were present before sterilization. Such trays are now widely used for all sorts of surgical procedures and are typically provided by the manufacturer for specific operations and implants. One can only imagine

the frequency of missing parts when instruments and implants were individually selected for each case.

Richard A. Brand MD
Editor-in-Chief
*Clinical Orthopaedics
and Related Research*

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William Compere Basom MD

Richard A. Brand MD