"blindly" with a nasal endotracheal tube. He then turned himself prone into a jackknife position on a giant Cloward orthopedic saddle frame, and positioned himself until he was comfortable. With his pannus suspended freely, the spontaneously breathing patient was able to maintain adequate ventilation without difficulty, as demonstrated by end-tidal carbon dioxide and pulse oximetry monitors. Anesthesia was then induced with no difficulty

In morbidly obese patients, the less suitable lateral decubitus position is often substituted for operations where the prone position would otherwise be used. Following an awake tracheal intubation of our non-sedated morbidly obese patient, he turned and positioned himself prone. Once satisfied that the patient was comfortable and having no difficulties breathing, induction of general anesthesia and mechanical ventilation followed. We believe this technique reduced the potential problems of delivering general anesthesia to a morbidly obese patient in the prone position.

BARRY N. SWERDLOW, M.D.
Attending Anesthesiologist
Good Samaritan Hospital
San Jose, California

JAY B. BRODSKY, M.D.
Associate Professor (Clinical)
Stanford University School of Medicine
Stanford, California

MICHEAL D. BUTCHER, M.D.
Attending Surgeon
Good Samaritan Hospital
San Jose, California

(Accepted for publication December 21, 1987.)

Anesthesiology
68:658-659, 1988

Extracorporeal Shock Wave Lithotripsy in Infants and Small Children: Gantry Modification

To the Editor:—Although extracorporeal shock wave lithotripsy (ESWL) is a widely used method for treatment of renal calculi in adults, experience with ESWL in infants and children has been limited. This is the result of several factors, including the relatively low incidence of kidney stones in children (3% of the total number of patients treated for nephrolithiasis) and the fact that the Dornier Lithotripter is not designed to accommodate individuals less than 4 feet tall. In addition, it has been reported that it is possible to cause a pulmonary contusion during ESWL in young children.[1] This results from the close anatomic proximity of the kidney and lung in children, and the fact that the shock wave focus may encompass part of the lower lung field. To prevent this problem, the lungs must be shielded with polystyrene or open cell foam during the treatment.

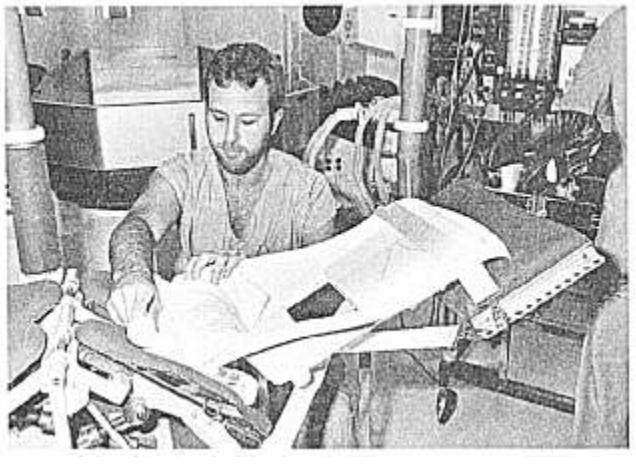

FIG. 1. Gantry modification showing the infant seat installed in the gantry.

A number of centers have reported their experiences with ESWL in children following modification of the lithotripter gantry. These modifications have taken a number of forms, including the use of a sheet or sling to suspend the child within the gantry,[1] extension of the shoulder and leg supports with 2 cm thick polystyrene boards,[2] and the development of a gantry insert that can be used in larger children.[3] We report another gantry modification that is suitable for infants and young children (<2 yr) in the form of a gantry insert made from a modified commerically available "infant seat" and sheets of closed cell foam (fig. 1).

An infant seat which can be purchased for under $10 is placed in the gantry with the back resting on the shoulder support and the seat resting on the thigh pads. The seat is secured to the gantry with the strap located on the shoulder support to prevent the seat from moving when immersed. The seat is modified by cutting a rectangular window in the back that allows the X-rays and shock wave to pass through the seat to the patient unimpeded. A sheet of 2-cm closed cell foam (readily obtained from the packing material in the electrode

boxes) is placed above and below the window. A piece of copper wire is inserted into the bottom edge of the foam above the window to allow the urologist to identify the lower edge of the foam during fluoroscopy and to adjust the foam to protect the lung by placing it at the cephalad edge of the kidney. The infant or child is held in place in the seat by the adult straps supplied with the gantry. The infant's arms are allowed to float free in the tank.

We believe that this gantry modification provides several advantages over sling devices in infants. First, it provides a stable platform that prevents movement during treatment, and, second, it eliminates any barrier between the patient and the shock waves. Finally, the components are inexpensive, readily available, and easily modified for use in the gantry.

CRAIG CALDWALL, M.D.
BRUCE BUTCHER, R.T.
Department of Anesthesia
Riverside Methodist Hospital and
The Ohio Kidney Stone Center
Columbus, Ohio

REFERENCES

1. Sigman M, Laudone VP, Jenkins AD, Howards SS, Riehle R, Keating MA, Walker RD: Initial experience with extracorporeal shock wave lithotripsy in children. J Urol 138:839–841, 1987
2. Kramolowsky EV, Bradley LW, Loening SA: Extracorporeal shock wave lithotripsy in children. J Urol 137:939–941, 1987
3. Kroovand RL, Harrison LH, McCullough DL: Extracorporeal shock wave lithotripsy in childhood. J Urol 138:1106–1109, 1987

(Accepted for publication December 28, 1987.)