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### Succinylcholine in Rubinstein-Taybi Syndrome

*To the Editor:*—Rubinstein-Taybi syndrome is a congenital anomaly characterized by broad thumbs and first toes, facial abnormalities, and mental retardation.<sup>1,2</sup> Cardiac anomalies are frequently present.<sup>3-5</sup> I predicted that "Succinylcholine . . . might cause arrhythmias in patients with Rubinstein-Taybi syndrome."<sup>5</sup>

Recently, I once again anesthetized the patient with Rubinstein-Taybi syndrome whom I had earlier described in some detail.<sup>5</sup> The patient, now 14 years old and weighing 22 kg, was admitted to the hospital on the morning of scheduled restorative dentistry.

The lead II electrocardiogram with the patient awake was similar to that obtained by Holter monitor 2 years earlier, and showed occasional instances (1-3 beats/min) of retrograde conduction. Heart rate was 105 beats/min. A rapid sequence induction of anesthesia with nasal intubation was planned.

Premedication consisted of 0.1 mg glycopyrrolate, iv, and heart rate and rhythm remained unchanged. Thiopental, 100 mg, iv, was followed by succinylcholine 20 mg, iv, and cricoid pressure was applied. Beginning 15 s after succinylcholine, a variety of abnormal cardiac rhythms occurred for the next 5 min. Short runs of supraventricular tachycardia were interspersed with multifocal premature ventricular contractions (5-10 min) and occasional premature atrial contractions. Blood pressure remained stable at 100/60 mmHg. Intubation was performed and the case proceeded uneventfully.

The frequency of cardiac abnormalities in Rubinstein-Taybi syndrome (approximately 33% of patients in each of two series had known conduction or structural

defects)<sup>3-5</sup> would seem to predispose such patients to abnormal responses to cardioactive drugs. Indeed, 2 years earlier, the patient described above displayed a variety of arrhythmias following administration of neostigmine and atropine for antagonism of neuromuscular block.<sup>5</sup> However, at that time, succinylcholine use did not cause arrhythmias.<sup>5</sup> In this instance, it did.

"Special attention to . . . the cardiac effects of neuromuscular blocking agents . . . is advisable in order to minimize the risks of . . . cardiac arrhythmias in patients with Rubinstein-Taybi syndrome."<sup>5</sup>

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### Double, Double: Arrow Introducer Kits are Self-Sealing

*To the Editor:*—The Arrow Percutaneous Sheath Introducer Kit (Product No. AK-06800) discussed in the Doblar *et al.* article which appeared in the April and

May issues of *Anesthesiology*,<sup>1</sup> was discontinued as a standard Arrow product *prior to* this article first being published. Arrow was made aware that this article would

appear but was also told that the article would clearly state that the product was being discontinued and replaced by the new AK-09800 Kit featuring a hemostasis valve/side port adapter (available since December 1981) specifically designed to eliminate the potential for air embolization when a PA catheter is not in place. The failure of your journal to mention this has resulted in some confusion among the users of Arrow's kits. Furthermore, the fact that (for some unknown reason) this article appeared in two consecutive issues without correcting this situation doubled physician exposure to this problem.

Accordingly, I want to state clearly that Arrow International, the leading manufacturer of PA catheter Introducer Kits, has acted responsibly to not only obviate the air embolism problem due to misuse of the product, but also to significantly improve patient care by making the following changes to Product No. AK-09800/09801:

(1) The new hemostasis valve side port adapter, as well as a lock-on obturator (provided in a separate sterile pouch pack), provide a triple factor of safety in preventing air embolism or back-bleeding after removal of a PA catheter, making this the only system designed for safe prolonged sheath and side port utilization.

(2) The introducer is specifically designed to remain in the vessel providing an additional central line through the side port (with 7-Fr PA catheter or obturator in place) equivalent to the flow rate of a 16-gauge catheter.

(3) When the PA catheter is not being used, the lock-

on 7-Fr obturator (6 inches long) acts as a "dummy catheter" to keep the sheath from kinking. Sterility is preserved until use in a sterile pouch pack.

(4) Removable luer-lock design of the side port allows use of a full 8-Fr inside diameter of the sheath for emergency fluid infusion if required.

(5) The PA catheter can be pre-assembled with side port/hemostasis valve adapter and tested for inflation integrity prior to insertion through the sheath.

(6) The catheter contamination shield protects the PA catheter from external contamination after placement, minimizing the risks involved with subsequent manipulation or repositioning. Any questions regarding these product improvements should be directed to: Paul L. Frankhouser, Manager of Marketing and Product Development, Arrow International, Inc., Hill and George Avenues, Reading, Pennsylvania 19610. (800, 523-8446, outside of Pennsylvania).

Thank you in advance for your cooperation in bringing the above points to your readers' attention.

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### Toil and Trouble: People Fail More Often Than Equipment

*To the Editor:*—You have probably achieved one of those famous publishing firsts; at least I don't recall seeing the same article two months in a row in the same journal (Doblar *et al.* "Air Embolism Associated with Pulmonary Artery Catheter Introducer Kit", April and May, 1982<sup>1</sup>).

There are two important points to be made regarding the reported incidents. The first is that the kit referred to is no longer produced, and the one now available from Arrow is self-sealing as indicated in the article. The second point and urgent lesson we must learn is the importance of communication and follow-up whenever we do any procedure and then turn the patient over to another individual. The more complicated our

procedures and care become, the more people are involved, often with differing levels of expertise. Properly used equipment rarely causes problems. It is easy to blame equipment, but a human factor is generally more important, as this article demonstrates.

Accidents, like those reported, are direct results of the fragmentation of care, and we are all unavoidably involved with that fragmentation—our seriously ill patients remain critical for more hours than one person can manage. Each of us must establish procedures designed to assure that detailed information about patients and equipment is passed on to our associates! The authors do us a service if they remind us that continuity of care is a serious responsibility.