clusion of the bypass in the early postoperative scarring period.[1, 2] It has been recommended for any type of venous reconstruction surgery and is advisable even in the case mentioned by Dr. Witte.

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Infected aortic bifurcation grafts

To the Editors:

The presentation by Becker and Blundell[2] in a recent issue was excellent; however, we must strongly disagree with their statement on page 548: "Endoscopy beyond the first portion of the duodenum probably should not be performed when clinical suspicion for a [aortoduodenal] fistula is high."

Indeed, not only should one pursue endoscopy to the third portion of the duodenum when an aortoduodenal fistula is suspected, but it should be the first study performed in this situation. Upper gastrointestinal endoscopy is a rapid and safe procedure that can be performed during acute hemorrhage while supportive therapy is being instituted. It can be done without moving the critically ill patient from the intensive care unit, where personnel and equipment are readily available.

The definitive diagnosis is made when a vascular prosthesis is seen in the duodenal lumen. The diagnosis is inferred when the endoscopist sees either a bile stained structure, a suture line, a pulsating structure, or arterial bleeding in the second or third parts of the duodenum of the patient who has undergone vascular reconstructive surgery. We have made the diagnosis of aortoduodenal fistula in several cases using the endoscope and have diagnosed other sources of hemorrhage in a patient suspected of having an aortoduodenal fistula.

We consider endoscopy to the third portion of the duodenum essential in the rapid diagnosis of upper gastrointestinal hemorrhage. We utilize endoscopy as our primary diagnostic tool because of the safety and rapidity with which it can be performed in the acutely ill patient. Rapid diagnosis of the aortoduodenal fistula is the key to patient salvage from this usually lethal problem.

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Reply

To the Editors:

Our statement quoted by Baker and Baker was made with the notion that the manipulation, suction, or irrigations associated with endoscopy might dislodge clot and precipitate uncontrollable hemorrhage. However, we are not ourselves experienced with endoscopy beyond the esophagus and Baker and Baker well may be correct that endoscopy is not only safe but also has a high diagnostic yield. In their own case report the initial endoscopy was not rewarding so for that patient the yield was 50%.

We certainly agree that the key to success in these patients is rapid diagnosis and surgery. If an experienced endoscopist can make the diagnosis safely, then it seems clear that this should be the first test performed. A negative endoscopy is never conclusive and one still is obligated to pursue the diagnosis by other means when endoscopy does not delineate the source of bleeding. However, the safety of endoscopy remains a paramount consideration in my mind, and the question of its safety cannot be answered until we hear from others who have confronted this problem.

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Xenografted transplanted cells

To the Editors:

Prolonged survival of xenografted transplanted cells, as reported recently by Sollinger and co-workers,[9] has a long history, at least by surgical standards. It certainly far exceeds 1973 when Maugh's[7] interesting

report alerted the scientific community of the survival of transplanted cultured cells. This report elicited a host of responses, including one by us detailing the earliest historical developments in this area, a response to which passing reference was made at one time in *Science* but which failed to appear in its letter section.[1]

Judge for yourself as we quote from that letter:

. . . Gassul in a prize winning essay in 1921 reported that frog skin could be grafted, after first culturing it, onto other frogs. Cells grown in frog plasma containing media for longer than 13 days usually took. Those grown in saline, human, chicken or rat plasma perished.[3]

Since the data on which Maugh's report relies are not available his conclusion that "certain types of animal and human tissue lose their ability to provoke an immune response in a new host if these tissues have been grown in a culture medium for a critical period of time prior to transplantation," suggests that the findings he refers to may not be too different from Gassul's, reported more than half a century ago.

His comment that this new discovery has generated considerable skepticism is of interest and leads me to mention here briefly other observations that also bear on the subject; notably the reports by Rhoda Erdman, by Stone and his associates and by Kooreman and Gaillard. All these studies share the concept that Stone defined as "the biochemical adaptation of the graft to the host"[10] by a process consisting of culturing cells in a medium that contained among other constituents blood and tissue extracts of the host in order "to adopt the grafted tissue to the host before implantation."[10]

Erdman[2] applied Gassul's technic to graft frog skin onto toads. She found that the critical period for tissue to have to remain in culture prior to successful take was much longer than that observed by Gassul. Stone et al applied this principle for thyroid and parathyroid transplantation in thyroidectomized parathyroidectomized dogs and patients[10] while Kooreman and Gaillard, using cultured embryonic parathyroid tissue and skin, reported on similar experiments in man.[5]

It would seem then that the question is not so much whether the observation is correct but why cultured cells or organs are adopted more readily than non-cultured ones.

Since then much more information concerning the studies to which Maugh referred has become available.[4]

Sollinger and associates' and other recent studies[6, 8, 12] on the subject are important not only because they confirm those very early investigations but also because they show that the content of the culture media may not be as important as was thought initially by Gaillard[6] and finally because they provide an answer as to why cultured cells are adopted more readily.

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