

LETTERS TO THE EDITORS

The Editors invite readers to submit letters commenting on the contents of articles that appear in the Journal. Also welcome are brief communications in letter form reporting investigative or clinical observations without extensive documentation and with brief bibliography (five titles or less), not requiring peer review but open to critique by readers. Letters to the Editors should be no more than 500 words in length and they may have to be edited for publication.

Regarding "Presidential address: Vascular Surgery—Comparing outcomes"

To the Editors:

In his presidential address to the North American Chapter of the International Society for Cardiovascular Surgery (J Vasc Surg 1996;23:5-17), Dr. Robert Rutherford identified the Physiologic and Operative Severity Score for the Enumeration of Mortality and Morbidity (POSSUM) as the best currently available system for risk-adjustment analysis in assessing outcomes. We have been using the POSSUM system since 1992 and currently have prospectively collected data on more than 11,000 patients. We believe that we have produced the only validation study of the POSSUM system independent of the system's originators. As such, we would like to express a note of caution about POSSUM as it currently stands.

The concept behind POSSUM is excellent. Risks of complications and death are derived from scores of both the physiologic status of the patient and the severity of the operation that they undergo. The scores are also weighted in a fashion to mimic the failing mechanisms of negative feedback. Despite this, we previously raised some doubts regarding the data analysis that need to be addressed before POSSUM can be used with confidence.¹ There is currently no published method for the analysis of POSSUM data. Analysis of this data by accepted methods, as found in standard texts of medical statistics, results in a massive overprediction in mortality rates.²

In conclusion, we would caution against the widespread acceptance of POSSUM in its current form. Once the system of analysing POSSUM data has been standardized and independently validated, we believe that a POSSUM-style system will become the gold standard for measuring and comparing the outcomes from surgical intervention.

Mark Whiteley, FRCS, FRCSEd

David Prytherch, PhD

Departments of Surgery and Medical Physics
Queen Alexandra and St. Mary's Hospitals
Portsmouth, United Kingdom

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Reply

To the Editors:

I appreciate the note of caution about the Physiologic and Operative Severity Score for the Enumeration of Mortality and Morbidity (POSSUM system) from Drs. Whiteley and Prytherch. Their two articles that criticized the system were published after I researched my presidential address, but do not affect my basic message on that subject, which is that even though POSSUM appears to represent an improvement over other previous approaches and has been successfully used to audit a vascular surgical experience, we (vascular surgeons) need a system that (1) is more specific for vascular surgery; and (2) uses only preoperative parameters, which would eventually allow us to use it to predict as well as compare procedural risks.

A POSSUM-like system may eventually become "the gold standard," as Drs. Whiteley and Prytherch suggest, but it remains to be seen whether it will be applicable to all surgical practices and thus usable by other than general surgeons (e.g., vascular, orthopedic, and cardiothoracic surgeons), the majority of whose practice does not involve abdominal surgery. I suspect that this will be difficult to accomplish.

Robert B. Rutherford, MD

University of Colorado Health Sciences Center
Department of Surgery, Box C312
4200 East Ninth Ave., #5521
Denver, CO 80262

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Infected thrombophlebitis of the right internal jugular vein

To the Editors:

We report a successfully treated case of infected thrombophlebitis of the right internal jugular vein, which occurred about 4 weeks after internal jugular cannulation.

A 56-year-old man was consulted because of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia of unknown origin. The patient underwent resection of recurrent leiomyosarcoma of the ileum and jejunioileectomy a month ago. A catheter was placed in the right internal jugular vein for central venous pressure monitoring during operation and was used for intravenous transfusion for several days after surgery. The patient tolerated the operation well.

Four weeks after the operation, bacteremia developed in the patient. Blood cultures were positive for MRSA.

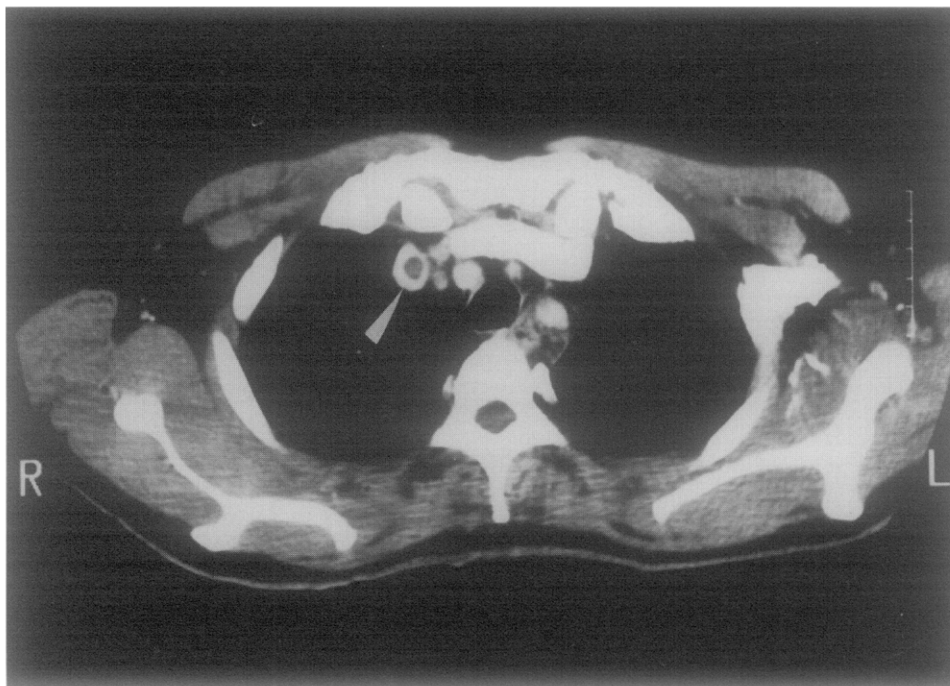


Fig. 1. Dynamic CT scan shows thrombus extending into brachiocephalic vein (arrow).

Vancomycin hydrochloride was started intravenously with no effect. A whole-body computed tomographic (CT) scan disclosed no abscess. There was no vegetation in the heart. The wound was not infected.

A dynamic CT scan and echographic scan demonstrated that the right internal jugular vein was nearly occluded at the previous punctured site and thrombus was extended into the brachiocephalic vein (Fig. 1). The diagnosis was infected thrombophlebitis of the right internal jugular to brachiocephalic veins.

An urgent operation was performed through a full median sternotomy, extending the skin incision obliquely to the tip of mastoid. There was no subcutaneous abscess. The right jugular vein was tightly adherent to the surrounding tissue. Neither hypoglossal nerve nor vagus nerve could be identified. The brachiocephalic vein was first divided from the superior vena cava and then divided from the subclavian vein between sutures. The internal jugular vein was interrupted in the area of normal vein wall distal to the punctured site. The internal jugular and brachiocephalic veins were resected enbloc. The thrombus was organized in some parts, and contained pus. Cultures of pus and thrombus were positive for MRSA. No infection was recurred and the patient was discharged.

The initial diagnosis workup should be completed without delay. The portal of entry was suspected to be at the punctured site. Infection stands first on the list of compli-

cations associated with internal jugular cannulation.¹ Because about one fifth of patients who have *S. aureus* bacteremia develop septic shock that is associated with a mortality rate as high as 50%,² the uncontrolled bacteremia often necessitates aggressive treatment. Thrombectomy using a Fogarty catheter should not be selected if the thrombus is infected. The operation of choice is resection of the infected vein and thrombus enbloc.

Yasushi Terada, MD
Toshio Mitsui, MD
Tomoaki Jikuya, MD
Yuichirou Kaminishi, MD
Kou Watanabe, MD

Department of Cardiovascular Surgery
Institute of Clinical Medicine
University of Tsukuba Hospital
Tsukuba 305
Japan

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