

was determined to be a broken oxygen check valve (fig. 1).

A broken oxygen check valve results in a potentially dangerous condition: in the event of a failure or rupture of the high-pressure oxygen line, use of the oxygen cylinder as a back-up results in the high-pressure oxygen escaping from the machine, and, therefore, the inability to ventilate the patient.

We recommend that the proper function of the oxygen check valve on Ohmeda (Ohio®) Modulus™ I anesthesia gas machines be periodically checked and promptly replaced if found to be defective.

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In reply:—Ohmeda agrees with the authors' recommendation that the function of the oxygen pipeline inlet check valve on the Ohmeda (Ohio®) Modulus™ I Anesthesia Gas Machine be checked periodically and the check valve replaced if defective. The Operation and Maintenance Manual for the Modulus™ contains preoperative checklist test procedures intended to verify the integrity of all pipeline inlet check valves. As stated in this manual, these procedures should be reviewed and all relevant procedures performed daily.

The pipeline inlet check valves were designed to prevent gas flow from the machine-mounted cylinders into the piped gas system of the facility. In late 1982, the bullet-shaped plug on the check valve was redesigned to improve the reliability of the valve. Modulus™ ma-

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Extracorporeal Circulation in a Patient with Heparin-induced Thrombocytopenia

To the Editor:—Smith *et al.*¹ report a case of heparin-induced thrombocytopenia in which aspirin and dipyridamole were administered to prevent platelet aggregation and possible embolic phenomenon during the period of heparinization and extracorporeal circulation. They mention that an alternative would be to use warfarin, “. . . but the difficulty with rapid reversal of anticoagulation with this drug may be a problem.” The same criticism can be made of aspirin and dipyridamole, since prolonged inhibition of platelet function following the administration of these drugs will almost certainly necessitate platelet concentrate administration to secure hemostasis, as occurred in their case.

chines manufactured since November 1982 utilize this redesigned check valve. Ohmeda has not received any reports of pipeline inlet check valve malfunctions involving the redesigned check valve.

For additional information contact the local Ohmeda representative or contact Ohmeda in Madison, Wisconsin, at (608)221-1551.

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We have safely cared for three patients with well-documented heparin-induced thrombocytopenia and to whom we administered Iloprost (ZK), a new prostacyclin (PGI₂) analog, which immediately inhibits platelet function but has a half-life of 15–30 min. In these patients discontinuation of the infusion after protamine administration resulted in a prompt return of platelet function and platelet concentrates were not required in any case. While this drug possesses some vasoactive properties similar to PGE₁ and PGI₂, the hypotension was much less than in our previous experience with those two drugs and was easily managed with small doses of phenylephrine.

The clinical entity of heparin-induced thrombocytopenia is now better appreciated and clinicians must be aware of its existence.³ Any patient who has thrombocytopenia or further emboli develop while being treated with heparin may have heparin-induced thrombocytopenia and should be evaluated for this condition.

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Possible Pharmacologic Trespass in Pheochromocytoma Patients

To the Editor:—With reference to a recent clinical report on the use of magnesium sulfate in the anesthetic management of pheochromocytoma,¹ we would like to comment on the three drugs used in this patient.

Histamine² has been shown to provoke the release of catecholamines from chromaffin cells and to produce substantial rises in blood pressure in pheochromocytoma.³ It has in fact formed the basis of provocative tests that are now regarded as dangerous.⁴ Papaveretum is capable of releasing histamine and therefore should be avoided.^{5,6}

The anticholinergic action of scopolamine will promote uninhibited sympathetic activity, which will contribute to the increased catecholamine drive.

It is apparent from a number of case reports in the literature that although droperidol can induce hypotension in normal individuals, it may cause severe hypertension and tachycardia in some patients with pheochromocytoma.^{7,8}

In a recent study,² it was shown that droperidol promotes the efflux of catecholamines from adrenal medullary cells via a nonexocytotic mechanism by inhibiting catecholamine uptake in the chromaffin granules.

Although this patient seemed to be satisfactorily controlled up to the day of surgery, three drugs with the potential for aggravating the manifestation of pheochromocytoma were given before the operation and possibly accounted for the acute hemodynamic disturbances that occurred. Traditionally, the short-acting sodium nitroprusside has been used to manipulate the

acute circulatory changes associated with surgery for resection of a pheochromocytoma. While the use of magnesium sulfate represents a novel approach, it would be preferable to assess its value in circumstances not complicated by potentially detrimental pharmacologic agents.

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