be significantly reduced by simply applying the concept of normoxia, without considering pH, calcium levels, osmolarity, or pressure. This is demonstrated in the present study and in our studies of hypoxemic immature hearts.^{1,6,7} However, cardiac reoxygenation injury during ischemia was avoided only by using oxygen reduced, controlled reoxygenation with substrate-enriched blood cardioplegic protection.^{4,8} We must also consider that, contrary to coronary reperfusion, hyperoxia not only affects the myocardium, but may have a whole body effect.

Our study¹ was designed to assess the damaging potential of hyperoxic extracorporeal circulation. Both patient groups underwent ventilator hyperoxia, which is clinically routine, as mentioned by Thomas and associates. There is evidence that hyperoxia during ventilator support also may have negative effects.⁹ It is therefore conceivable that patients have an initial reoxygenation injury before cardiopulmonary bypass (CPB). The results of our study,¹ however, indicate that this was not the case, inasmuch as biochemical markers of injury were low at institution of CPB and rose later. Further investigations will have to address this interesting issue.

I believe that hyperoxia is not physiologic, but damaging to all organs, and furthermore unnecessary, especially during CPB.¹⁰ All clinical situations dealing with reperfusion after ischemia or reoxygenation after hypoxia (for example, transplantation, replantation, and extracorporeal membrane oxygenation) have to take into account the damaging potential of hyperoxia and may benefit from applying normoxia. For example, we could demonstrate that adherence to these concepts can prevent reperfusion injury after prolonged skeletal muscle ischemia.¹¹

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Consideration of anatomic defects in the etiology of catamenial pneumothorax

To the Editor:

We read with interest the recent report of Fonseca,¹ "Catamenial Pneumothorax: A Multifactorial Etiology." We certainly agree that the etiology of this disorder is uncertain, and Fonseca's report is a timely contribution to our understanding of this condition, which is becoming increasingly recognized. In fact, a recent report by Blanco and associates² estimated that catamenial pneumothorax accounts for 2.8% to 5.6% of pneumothoraces in women. Indeed, because spontaneous pneumothorax occurs overwhelmingly in men, we conclude that this entity should be considered in all premenopausal women who have pneumothorax, especially with recurrence. A search of the literature reveals that this disorder is becoming increasingly appreciated.

Although we concur that multiple causes may account for the occurrence of recurrent pneumothoraces in these patients, we cannot overlook the role of anatomic abnormalities. We³ recently reported a case of catamenial pneumothorax in which diaphragmatic endometrial implants and fenestrations were encountered. In addition, other recent reports have documented similar findings.^{2,4} Likewise, Slasky and coworkers⁵ reported on 3 patients with catamenial pneumothorax and diaphragmatic involvement in whom the central tendon of the diaphragm was resected with good results. We think that the estimates of the incidence of diaphragmatic implants or fenestrations quoted by Fonseca are low, and we refer to the more recent meta-analysis performed by Joseph and Sahn.⁶ These authors found that in 48 women who underwent surgery for catamenial pneumothorax, 42 had diaphragmatic fenestra-

Fig 1. Cinefluoroscopy of mitral prosthetic disc moving freely in the left ventricular cavity.

tions, endometrial implants, or both, an incidence of nearly 88%. If these findings do indeed turn out to be more consistent than previously appreciated, then it would seem logical to implicate their presence in the etiology of this condition.

We also acknowledge the effects of systemic factors in the etiology of this disorder. Indeed, although not used in the case report by Fonseca, we note the excellent results reported in the systemic management of catamenial pneumothorax with gonadotropin-releasing hormone analogs. These might be the agents of choice in systemic therapy for this increasingly recognized syndrome.^{3,7}

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Patient recovery after intermittent disc escape and spontaneous recession of a mechanical heart valve

To the Editor:

The following case is the first known instance of intermittent disc escape and spontaneous recession of a mechanical heart valve with recovery. The patient, a 38-year-old book-keeper, was admitted to the Carolinas Medical Center on February 6, 1983. Her past history included mitral commissurotomy in 1966 and mitral valve replacement with a porcine heterograft in 1977. She was re-evaluated in February 1983. Cardiac studies revealed severe mitral regurgitation,