of compromised margins. Moreover, the location of the original tumor can be inaccurate and the delivery of boost therapy can be jeopardized. Therefore, as we described previously,[4,5] careful planning with the breast surgeon is essential. We advocate orienting the glandular specimen and also placing surgical clips at the tumor margins. In cases of reexploration, it is reasonable to perform reexploration with the plastic surgery team present to identify the original tumor bed and to avoid injury to the nipple-areola complex pedicle.[4,5]

In conclusion, this combined approach, termed "oncoplastic surgery," which is commonly performed in Europe, is becoming increasingly accepted by oncologic surgeons. Fundamentally, by means of customized plastic surgery techniques, the breast surgeon ensures that oncologic principles are not jeopardized while meeting the needs of the patient from an aesthetic point of view. Thus, breast cancer management has evolved from a thinking of "resect all that can be resected" to "resect just what is required and combine with reconstructive techniques." In essence, the goal of breast surgery is to provide an oncologically safe procedure while leaving a breast form that is aesthetically acceptable to the patient. We believe that although the technique requires more preoperative planning and intraoperative care, the concept can reduce deformities, favor the oncologic treatment, and optimize the aesthetic outcome. As more surgeons adopt the oncoplastic concept, more techniques will be developed to further benefit women who are diagnosed with breast cancer. We are in agreement that plastic surgery techniques should be integrated with the primary oncological operation, thereby reducing unsatisfactory results, patient dissatisfaction, and the need for delayed secondary procedures.

DOI: 10.1097/01.prs.0000247923.67911.af

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Reply

Sir:

We thank Drs. Munhoz and Aldrighi for their work and comments. It is gratifying to see the recent interest not only in breast preservation but also in producing an aesthetically pleasing result in one operation. Patients are incredibly pleased if any good can come in the midst of their fight against breast cancer.

We do not doubt that our colleagues around the world are faced with the same problems in breast surgery that we encounter, and have many innovative and workable solutions. It is imperative that we alert our general, breast, or oncologic surgery colleagues about these procedures, as it is they who often see the patient first and discuss treatment options. We need to speak at general surgery rounds, submit articles to their journals, and duplicate appropriate articles from our literature for them. We anticipate the oncoplastic concept will gain more widespread acceptance among breast surgeons, providing patients with a greater opportunity of receiving excellent oncologic and cosmetic results in one setting.

DOI: 10.1097/01.prs.0000247926.88921.45

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Laboratory Assessment of Burn Depth

Sir:

We were intrigued by the concept of using a laboratory test to assess the depth of burn injury.[1] In our clinical pilot studies, we have been looking at the concentration of plasma cell-free DNA

as an indicator of severity of injury in burn patients.[2] There is a good correlation between circulating levels of plasma cell-free DNA and other forms of trauma that have previously been reported.[3,4] At this stage, we have not been able to identify the cell source of the DNA assayed in the clinical studies, but this is the focus of ongoing laboratory research. Our preliminary findings, however, do support the concept that we can begin to consider plasma cell-free DNA as an indicator of the volume of tissue damage in burn injury and thus, justifiably, as an indicator of severity of injury and a potential prognostic tool. This is very different from the hypothetical construct proposed by the Singapore group, which suggests the potential for using a laboratory measurement in the clinical decision-making process of surgical management of the burn injury. The key determinant in surgical management of a burn is the depth of injury. We have published our algorithmic approach to burn management predicated on five practical depths of injury.[5] We agree with our Singapore colleagues that assessment of the superficial partial-thickness burn on the one hand and the full-thickness burn on the other can be made with a relatively high degree of clinical confidence. For us, the more critical assessment is between what we call the intermediate-depth partial-thickness burn and the deep partial-thickness burn. The differentiation can be of critical importance in both surgical timing and strategy. Much discussion has focused on the accuracy and methodology of burn depth assessment, and we acknowledge that this remains a challenging area of burn practice. We believe, however, that the hypothesis proposed by the Singapore group is fundamentally flawed for clinical application. Why? It is based on the assumption that burn depth is uniform; it is only under laboratory conditions that a burn of a certain percentage of body surface area can be confidently predicted to be of a uniform depth. Clinically, the challenge is not to determine "the depth of the burn" per se but to determine the relative depths of different parts of the burn and/or the depths of the different noncontiguous burns. Analysis of hemolysis will never give the answer. What about the timing of analysis? A burn is an evolving injury, and certainly our teaching and practice is to wait for 48 hours before assessing the definitive depth of scald injury. In addition, burn depth can be affected both iatrogenically by inotropes and pathologically by infection, so again, free hemoglobin assayed optimally 15 minutes after injury in the laboratory does not seem to have a clinical correlate. In our experience of running a rigorous clinical study involving ethical approval, informed consent, and strict inclusion and exclusion criteria, the expectation of appropriate blood sampling within 2 hours of injury is not realistic. A further consideration is the processing of the samples. In conclusion, then, while we appreciate the scientific rigor of the reported study, we believe that there is no realistic correlation between the assessment of plasma free hemoglobin and the diagnosis of depth of clinical burn injury. On the other hand, we do suggest that the authors should consider looking at the association between plasma free hemoglobin and plasma cell-free DNA and possibly think more of prognosis than diagnosis.

DOI: 10.1097/01.prs.0000247907.82252.b0

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Reply

Sir:

We thank Drs. Chiu and Burd for their comments on our article.[1] Their critique provided an opportunity to address several aspects of our study that warrant further discussion and perhaps to clarify some of the findings. Foremost is our choice of plasma free hemoglobin as the subject of our laboratory investigations. Injuries involving thermal accidents occur predominantly in developing countries, where resources are scarce. It was with this in mind that, when we started searching the literature for a potential diagnostic adjunct that can help in the assessment of burn injury, cost was a major consideration for our selection. While previous authors have reported on the use of modalities such as laser Doppler in the assessment of burn depth, the cost involved would make the widespread use of such tests unlikely, particularly in developing countries. Similarly, plasma cell-free DNA required polymerase chain reaction technology, which again would be financially prohibitive for most laboratories.[2]

Hemolysis is a well-known phenomenon in burns,[3] and because of the ease of measurement (with no additional cost), we selected this marker for our investigation. Blood samples are centrifuged and the plasma free hemoglobin level can be measured directly with a spectrophotometer, which is readily available in most laboratories. We subsequently demonstrated the correlation of plasma free hemoglobin levels with total body surface area burned and depth of burn injury. As with plasma cell-free DNA,[2] free hemoglobin is an indicator of the volume of tissue damage and severity of injury. The proportionality to both total body surface area burn and depth of burn is the evidence of this. The pattern of clearance from the circulation has also been documented in our study. However, we noted several limitations that may potentially hinder the clinical application of this marker, and these limitations were detailed in our article.[1] Some of these limitations were also pointed out by Chiu and Burd, including the following: the evolving nature of the burn injury, with potential of conversion into deeper burns in poorly resuscitated patients; fluctuating levels of free hemoglobin as it is cleared by the kidneys and liver; and problems with a burn of nonuniform depth.

The main problem with the use of any laboratory marker, such as plasma free hemoglobin or cell-free DNA, is that once formed, these products are actively removed from the circulation. We found that for plasma free hemoglobin, the levels peaked within the first hour after the onset of injury and gradually declined thereafter as hemoglobin was cleared from the circulation. Although Chiu et al. noted that the level of plasma cell-free DNA was significantly elevated in burn patients compared with control patients,[2] they did not study how the level changes with time as the plasma cell-free DNA is cleared from the circulation. Having an understanding of how this level changes with time is important in interpreting the results obtained, whether as a diagnostic or prognostic indicator.

Although using plasma free hemoglobin levels as a prognostic marker seems plausible, our study was not designed with this as an outcome, and therefore we made no conclusions in this regard. This pilot study, however, served to define the behavior of this marker in a murine model. We agree that further studies are needed before this test can be applied in a clinically relevant way, and we hope that this pilot study can serve as a stimulus to further work in this area. Its performance in the clinical setting will have to await a rigorously designed clinical trial.

Finally, we would like to conclude by stressing that laboratory tests are merely diagnostic adjuncts and are not meant to be used as a clinical decision-making tool for surgical management of burn injury. Clinical acumen and experience remain the most sensitive and reliable ways to assess burn injury.

DOI: 10.1097/01.prs.0000247931.97358.37

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Effective Surgical Treatment of Cubital Tunnel Syndrome Based on Provocative Clinical Testing without Electrodiagnostics

Sir:

We read with great interest the article by Greenwald and colleagues on "Effective Surgical Treatment of Cubital Tunnel Syndrome Based on Provocative Clinical Testing without Electrodiagnostics" (*Plast. Reconstr. Surg.* 117: 87e, 2006). The authors performed anterior submuscular transposition to treat cubital tunnel syndrome, with good short-term results.

In 2005, Gervasio et al.[1] performed a randomized study comparing simple decompression with anterior submuscular transposition of the ulnar nerve in severe cubital tunnel syndrome. They found no statistically significant differences between the two groups with regard to the clinical or electrophysiological outcome. Good to excellent results, however, were obtained in approximately 83 percent.

Recently, a randomized prospective study comparing ulnar neurolysis in situ with submuscular transposition was undertaken.[2] Objective neurological improvement was obtained in only 61 percent of the neurolysis group and 67 percent of the submuscular transposition group. The latter was, however, associated with a higher incidence of complications. Given these studies, the question rises as to whether a complex procedure such as anterior submuscular transposition should still be performed as a first surgical procedure in patients with cubital tunnel syndrome.

Interestingly, the authors mention a multiple crush hypothesis with more than two compression sites. This hypothesis was confirmed in anatomic cadaver studies.[3,4] Compression sites along the cubital tunnel