Special Topic

Establishing Cleft Malformation Surgery in Developing Nations: A Model for the New Millennium

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Cleft management in developing regions of the world lags behind that of the United States. Many well-intentioned groups export surgical expertise to disadvantaged regions, but the models on which these organizations are based may be outdated. Guaranteeing patient safety, preserving indigenous culture, and teaching local surgeons the multidisciplinary approach to cleft care are key goals. In this article, a three-stage philosophical model (observation, integration, and independence) is presented for establishing safe, multidisciplinary cleft care in developing regions. Important factors include the recognition of interested local hosts and identification of funding. Aggressive assessment and recognition of negative forces, including misdirection, stagnation, and medical colonialism, is required. This model has been implemented in Nepal with success. (*Plast. Reconstr. Surg.* 106: 886, 2000.)

As cleft surgery has reached a new level of sophistication[1–6] in the industrialized world, regions of the developing world still lag significantly behind. Although there are many organizations in the United States that export surgical expertise to disadvantaged regions of the world, the models on which these organizations are founded may indeed be outdated.[7–10]

Many of these well-intentioned surgical groups send surgical teams to impoverished areas to provide needed services without financial charge. This model is based on an old philosophy regarding cleft care: that simple surgical intervention alone can produce quality outcomes. However, during the past three decades, it has become increasingly clear that successful cleft management requires a multidisciplinary, long-term, team approach.[11–15] To send a cleft surgeon to a remote region of the world without consideration of a genetic, dental, speech, or hearing evaluation of the patient population is perhaps irresponsible or, at best, purely an aesthetic rather than functional undertaking. Furthermore, as local surgeons in developing nations become interested in cleft surgery, teaching local surgeons the multidisciplinary approach must be paramount. Of course, patient safety must be guaranteed at all stages.

We describe a three-stage philosophical model for establishing a safe, multidisciplinary cleft team in developing nations and the subsequent implementation of this model.

Model

Phase I

Phase I in developing a cleft program in a new site is observation (Fig. 1). An interested local host is required who can supply not only patients but also medical personnel. Ideally, local health-care providers can observe the cleft team while it performs. All medical standards that are followed in the United States are maintained at the foreign site. These standards include a thorough preoperative medical evaluation to guarantee the sound health of the patient and strict perioperative cardiac and respiratory monitoring. Necessary medical equipment is transported to the site to safeguard these requirements. A sensitivity to local culture and traditions must be maintained at all times by all team members, without compromising medical standards.

Phase I serves as an observation period for both host and guest health-care providers. At

From Interplast, Inc., 300-B Pioneer Way, Mountain View, California 94041-1506. www.interplast.org. Received for publication December 14, 1999; revised February 22, 2000.

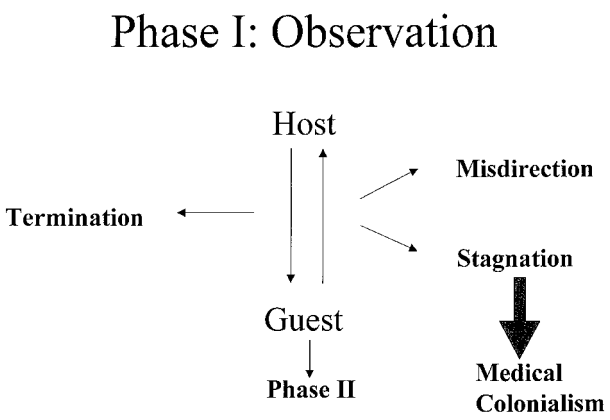

FIG. 1. A diagrammatic representation of the first phase required in establishing cleft malformation surgery in the developing world. Although an interested local host observes the guest team, this host provides key medical personnel and patients. Misdirection and stagnation must be avoided.

this early stage, several members of the guest team should remain at the site after the visit to coordinate postoperative care. As with any new alliance, this period is characterized by guarded interaction followed eventually by genuine enthusiasm, if an appropriate open attitude is maintained. Of course, some alliances prove inappropriate, and friendly termination of the project is required.

It is necessary to continually evaluate phase I, because two alternate outcomes are possible: misdirection or stagnation. Misdirection is characterized by a repeated failure to meet anticipated goals. These goals include progression to phase II, active participation by the host health-care providers, and maintenance of medical standards. Failure to meet these goals can be caused by either host and guest factors, especially if personal agendas intrude. For example, if an unscrupulous local host seeks financial or political profit from the presence of the visiting team, the moral imperative of the mission may be lost. Simply because the team is providing a much-needed service to an impoverished region does not justify its participation in an amoral scheme. Guest team members must be aware that the local health-care providers incur a financial burden by hosting the site visit, but this cost must not be passed on to the destitute patients or a financially strapped regional government. A fair and equitable arrangement must be sought whereby the guest team manages the majority of the cost; otherwise, in essence, the host pays for the supposedly free medical service. Conversely, guest factors such as proselytizing or insensitivity to local customs are not tolerated.

Stagnation is the other undesired outcome of phase I. This is characterized by failure to proceed to phase II, even in the absence of misdirection. It is no longer appropriate to simply provide a free medical service to a developing region without consideration for future independence of that site. Prolonged stagnation at a site creates a satellite clinic for which the local health-care providers have no interest in independence and the guest providers continue to return to the site routinely. Because the educational goals of the alliance are not met, the alliance must be reevaluated. Perpetuation of the alliance invites "medical colonialism." Medical colonialism allows guest participants to profit directly in a fashion not possible at home. One example is permitting guest health-care providers, who are unqualified to operate without supervision in the United States, to perform alone at the site. Allowing a guest provider who does not have privileges to perform a particular procedure in the United States to do so at the site is an even more egregious example. When several guest teams visit a region independently and in an uncoordinated fashion, the competition may in fact produce confusion. Unless an organized model is used, too many guest teams detract from the overall educational goal.

Phase II

Phase II (integration), in a healthy cooperative site program, naturally follows phase I (observation). In phase II (Fig. 2), host health-care providers play key roles in providing medical care, not only during guest-team visits but also

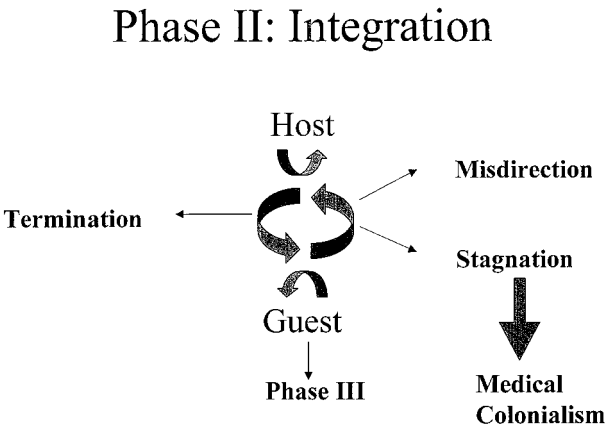

FIG. 2. A diagrammatic representation of the second phase required in establishing cleft malformation surgery in the developing world. During this period, the local host plays an integral and key role in providing medical care during both the presence and absence of the guest team.

during their absences. Integration requires interested host providers to work in a collegial atmosphere with the guest team. Academic interaction and exchange are mandatory. A cleft board consisting of both guest and host providers must be established to rigorously analyze both preoperative and postoperative cases. With each subsequent guest-team visit, the complexity of cases increases. Misdirection of phase II can still occur if personal agendas interfere with the education and integration process. Constant reevaluation of goals is mandatory. If it is concluded that termination is indicated, then such termination can be pursued.

Phase III

Phase III (independence) occurs when the host health-care providers maintain the site during the absence of the guest team (Fig. 3). During these periods, the hosts preserve the active clinical routines, saving the more complex cases for collaboration with the guest-team visits. This will allow a natural evolution from integration to independence, as the host providers gain surgical ability and insight. During phase III, a new level of interaction is possible with formal academic exchange by experts from both the host and guest teams. Because phase III represents the final stage of local independence, financing can be problematic as guest-team support diminishes. A separate source of revenue must be available to the host health-care providers to allow the cleft board to function independently. In a developing nation, this may represent the greatest hurdle to true independence.

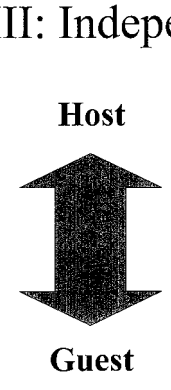

FIG. 3. A diagrammatic representation of the third phase required in establishing cleft malformation surgery in the developing world. The local host independently maintains the site at all times. Financing this independence is the most difficult step.

IMPLEMENTATION

Since 1987, Interplast, Inc., has sent surgical guest teams to Nepal. The evolution from phase I to II began in 1994, when an interested host health-care provider was identified. Major obstacles to the development of an integrated (phase II) team included actually identifying a dedicated host provider, overcoming local political issues in a culturally sensitive manner, and establishing a predictable routine for providing logistic support. As long as medical colonialism, misdirection, and stagnation are eschewed, the long evolution from phase I to II is acceptable. After several years of collaboration, local follow-up care is now routinely provided at each site in Nepal by host health-care providers, surgical procedures previously deemed too complex are performed routinely by host providers, and site maintenance and selection are determined locally.

The evolution to phase III is currently in progress. Funding provided by a U.S.-based, nonprofit organization, The Smile Train, has allowed a local health-care provider to perform multiple surgical procedures. From July 1 through October 30, 1999, a total of 97 cases have been independently treated free of charge by the host provider at sites previously devoid of plastic surgery care. Of these 97 procedures, 71 were cleft lip procedures (21 bilateral and 50 unilateral), 24 were palatoplasties, and 2 were pharyngeal flaps. There have been no major morbidities or mortalities. Additionally, local physicians are being trained by the host health-care provider in cleft surgery. Although development of the cleft board is still in its early stages, there is involvement on the board by local otolaryngologists and speech pathologists. Adequate orthodontic management remains a challenge.

SUMMARY

This three-stage model outlines a safe and effective method for achieving a local cleft board in a developing region. Maintaining local culture and guaranteeing patient safety are paramount concerns. Success is rooted in the constant assessment and recognition of negative forces, including misdirection and stagnation. The key factors are the identification of an interested local host and a source of funding as the site evolves toward independence.

As of June 30, 2000, 501 cases had been performed independently and free of charge by the

host health-care provider in Nepal. There had been no major morbidities or mortalities.

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ACKNOWLEDGMENTS

The local health-care providers and patients have earned our strongest gratitude. The authors also thank all the volunteers and donors who have made this activity possible.

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