Laparoscopic suturing is a fundamental skill in advanced laparoscopic surgery. It requires a great deal of patience and practice. The mastery of this skill will enable the surgeon to perform many complex laparoscopic procedures and to laparoscopically repair complications should they occur.

Monitors
In performing complex laparoscopic surgery, the ergonomics of the operating room are of paramount importance. The monitor should be comfortably located at the level of surgeon’s eyes, facing the surgeon on the side of the lesion. For example, during a cholecystectomy the monitor should be positioned on the patient’s right side in direct line of vision of the surgeon. While during a laparoscopic Nissen the surgeon stands between the legs of the patient in the French position with the monitor placed at the head of the patient facing the surgeon.

OR Table
The height of the table should correspond to the surgeon’s height, which will naturally place the surgeon’s arms at the correct position to maneuver the laparoscopic instruments. The wrists should be straight, and the elbows comfortable. If the wrists are flexed (Fig. 16.1), either the table is too high or the trocars are placed too high. To fix a height discrepancy between the surgeon and the table, one should either readjust the table or use steps. If the problem is not fixed with adjustment of the table, the ports are placed too high and need to be repositioned to a lower location.
In addition, the table can be manipulated to the advantage of the surgeon. For example, during a laparoscopic appendectomy, tilting the table right side up and head down helps to move the small bowel into the left upper quadrant for better exposure. In essence, tilting the table creates an extra hand.

**Trocar Placement and Triangulation**

Successful laparoscopic suturing is dependent on a key concept in laparoscopic surgery, the *triangulation of instruments*. Triangulation occurs when the right and left hands of the surgeon are positioned on either side of the camera and form a 90° angle with the camera. This is the basic trocar position and will avoid the “knitting needle” effect of the instruments when using a two-handed technique. In addition to the triangulation of trocars at the skin at ninety degrees with the laparoscope, it is important to insert the trocar in such a way that the instruments also triangulate inside the abdomen at ninety degrees in a *double triangulation* (Fig. 1.11, Chap. 1). This is critical and especially important in patients who are morbidly obese with a thick abdominal wall. A trocar that is inserted straight down does not allow any movements of the instruments.

**Fig. 16.1** Correct position of wrists. (a) depicts wrists in line with the forearms. (b) depicts incorrect flexed wrist position (operating table too high or trocar ports placed too high)