SURGICAL PATIENT SUPPORT

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ABSTRACT
A surgical table is pivoted to one end of a horizontal arm, the other end of the arm being pivoted adjacent the top of a pedestal so that the table can be supported outwardly from the pedestal in cantilevered fashion and moved to various adjusted positions about the pedestal. The pedestal is tethered by a elongated radial arm to some point on the floor of the operating room or on the floor of an adjacent anesthesia room so that the pedestal can be moved along the operating room floor in an arcuate path, the radius of which is the radial arm. The arm encloses cords and hoses for conducting various utility supplies, such as air, electricity, patient monitoring lines, vacuum and gaseous anesthetic through the arm to outlets on the pedestal.

3 Claims, 4 Drawing Figures
SURGICAL PATIENT SUPPORT

BACKGROUND OF THE INVENTION

The present invention relates to a surgical table and more particularly to a surgical table which is mobile, supported outwardly from a pedestal in cantilevered fashion and which has the pedestal of the table provided with outlets for various utility services and sensing or monitoring lines.

The standard surgical table is usually built on a central pedestal which may or may not be provided with wheels or casters. This central pedestal usually contains a hydraulic lift mechanism for raising and lowering the table. Because of the central pedestal, it is not possible to take x-rays through the patient at the center of the table. Consequently, certain surgical procedures must be interrupted and the patient moved should the surgeon require x-rays in this area. The central pedestal also prevents a surgeon from seating himself comfortably at the sides of the table, at the head of the table, or at the perineal end.

Also in the prior art, any utility service such as electricity, vacuum, compressed air, or gaseous anesthetic is usually brought to the surgical table through various cords and tubing stretched across the floor to wall sockets and hose outlets. All these cords and tubing running across the floor present a hazard to surgeons and nurses moving around the operating table. Accidental movement of patient monitoring lines also creates a hazard to the patient or the surgical table.

These various drawbacks of the prior art have been overcome in the present invention which first of all provides a surgical table which is mounted in cantilevered fashion to a pedestal. This leaves the entire area beneath the table free for access to x-ray apparatus and the surgeon. The cantilevered support arm is pivoted to both the pedestal and the surgical table so that movement of the table to various adjusted positions about the pedestal is readily accomplished.

Other drawbacks of the prior art are overcome by delivering the necessary utility services to the pedestal through a long radial arm which extends from the pedestal and along the floor of the operating room to an anchor or pivot point adjacent the operating room wall. With this arrangement, the utility services can be wired or piped from the anchor point and then through the radial arm to the pedestal. Mounting the pedestal on wheels permits swinging the entire pedestal and surgical table combination in an arc to various parts of the operating room as required for various set-up procedures.

SUMMARY OF THE INVENTION

Present invention may be characterized in one aspect thereof by a pedestal adapted for movement along a floor surface; a radial arm extending along the floor of the operating room, the arm having one end fixed at a pivot and the other end connected adjacent the bottom of the pedestal wherein the pedestal is movable in an arcuate path, the radius of which is the radial arm; a surgical table mounted to the top of the pedestal by a cantilevered arm so that the table is supported outwardly from and adjustable about the pedestal; and means extending through the radial arm to outlets on the pedestal for conducting utility service supplies and patient monitoring devices to the pedestal.

OBJECTS OF THE INVENTION

One object of the present invention is to provide a cantilevered supported surgical table.

Another object of the present invention is to provide a surgical table as aforesaid wherein the cantilevered support is pivoted to both the table and to an upright pedestal to permit movement of the table about the pedestal to various adjusted positions.

A further object of the present invention is to provide a surgical table which has its pedestal tethered to a radial arm running along the floor of the operating room so that the table can be moved in an arcuate path, the radius of which is the arm.

A yet another object of the present invention is to provide a surgical table as aforesaid wherein utility service is delivered to the pedestal through the radial arm.

These and other objects, advantages and characterizing features of the present invention will become more apparent upon consideration of the following detailed description thereof taken together with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing the surgical table, pedestal and radial arm of the present invention;

FIG. 2 is an elevation view showing use of x-ray equipment with the table of the present invention;

FIG. 3 illustrates the range of movement of the pedestal to various adjusted positions about the table; and

FIG. 4 is a plan view showing the range of movement of the table.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings, FIG. 1 shows the apparatus of the present invention, generally indicated at 10, to include a table portion 12. The table is carried on one end 16 of a cantilevered arm 14. Arm end 16 is journaled to the bottom of the table adjacent one edge 18 and the other end 20 of the arm is journaled to the top of a pedestal 22. Pedestal 22 contains the hydraulic lift mechanism (not shown) for raising and lowering table 12.

Forming part of pedestal 22 is a service console 24. The console and pedestal are mounted on wheels or casters 26 for movement across the floor of the operating room in a manner set out herein below.

Console 24 carries a plurality of outlets 28 which are connected to various services such as monitoring lines, vacuum, anesthesia gases and utility services, such as electricity and compressed air through cords and tubing 30.

The cords and tubings 30 are enclosed in an elongated radial arm 32 which has one end 34 connected to service console 24 and its other end 36 journaled at an anchor point where the services enter the operating room. With this arrangement the entire apparatus 10 can be moved in an arcuate path, the radius of which is the length of arm 32. If desired, a drive motor and drive wheel 38, 40 respectively can be provided for driving the arm and therefore the pedestal and surgical table through this arcuate path of travel.

Referring to FIG. 2, the advantages of having surgical table 12 mounted in cantilever fashion outwardly from pedestal 22 becomes readily apparent. As shown in
FIG. 2, a mobile x-ray apparatus 42 may be brought into the operating room for taking x-rays of the patient on the surgical table. Since there is no support column directly beneath the central portion of the surgical table, x-rays of the patient may be taken at any point along the patient's body. Likewise, a surgeon can comfortably seat himself at the side of the table with his legs extending beneath the table.

One advantage of having the surgical table adjustable with respect to pedestal 22 is shown in FIG. 3. Since cantilevered support arm 14 is journaled at one end to the table and at its other end to pedestal 22, the pedestal can be easily moved about the table from the position shown in solid line in FIG. 3 to positions A and B shown in dotted line. In the position shown in solid line, service console 24 which is part of the pedestal is positioned to administer anesthesia to the patient's left arm. Position A shows the console positioned for access to the patient's head and both arms while position B shows the console for access to the patient's right arm.

FIG. 4 shows how the adjustment capabilities of the surgical table about pedestal 22 and the movement of the pedestal through an arc defined by radial arm 32 can cooperate in the movement of the surgical table. In this respect, FIG. 4 shows a portion of a hospital operating room 44, an anesthesia room 46 and a patient corridor 48. The opening 50 from the patient corridor to the anesthesia room and the opening 52 from the anesthesia room to the operating room can be closed by any suitable means (not shown) such as a sliding door. It should be understood that the environment of the operating room 44 should be as sterile as possible. Patient corridor 48 is, of course, clean but not sterile. Anesthesia room 46 acts as a buffer between the unsterile conditions in the patient corridor and the sterile conditions of the operating room.

In the typical arrangement employing the present invention, radial arm 32 may have its end 36 journaled in the anesthesia room or in the operating room adjacent the wall between the anesthesia room and the operating room. FIG. 4 shows in solid line a typical arrangement for the various components of the present invention during a surgical procedure. At the end of the surgical procedure, the motor and drive means 38, 40 shown in FIG. 1 can be activated to swing radial arm 32 into the anesthesia room to the position shown in dotted line. Cantilevered arm 14 can then be swung counter clockwise about pedestal 22 to carry surgical table 12 from the anesthesia room into the patient corridor as shown in dotted line. In this position, the patient can be moved from the surgical table to a hospital bed 54 without the need for rolling a transfer bed or stretcher into the operating room or anesthesia room. Thus, the equipment rolling along the floor of the sterile patient corridor need never be rolled into the sterile environment of the operating room.

This process can be reversed when transporting a patient into the operating room. When moving into the operating room, however, the surgical table may be held in the anesthesia room and the necessary anesthesia administered to the patient. Thereafter, the radial arm is pivoted to move the surgical table and pedestal through opening 52 into the operating room as shown in solid line in FIG. 4.

Thus, it will be appreciated that the present invention accomplishes its intended objects in providing a surgical table which is relatively mobile within the operating room, to the side of the operating room, into an anesthesia room, or into the patient corridor for a transfer of the patient to or from a hospital bed. Having the surgical table mounted in cantilever fashion permits the surgeon and assistants to move close to and around the surgical table and also frees the entire area beneath the table for access by x-ray apparatus or other equipment. All of the cords, hoses, etc. supplying services to service console 24 are enclosed in arm 32 which greatly reduces the danger to personnel in the operating room.

While the services are shown entering the operating room through the floor, it is possible to run cords and hoses 30 from the ceiling through a vertical column and then journal radial arm end 36 to such a column.

Having thus described the invention in detail, what is claimed as new is:

1. A mobile surgical patient support for use in an operating room or the like, comprising:
   a. a service console adapted for movement along a floor surface, said console having a plurality of outlets for utility services and the like;
   b. a horizontal support arm having one end pivoted to said console to permit movement of said support arm in a horizontal plane;
   c. a surgical table pivotably supported from said console in cantilever fashion on the outwardly extending end of said support arm, said support arm being pivoted to the bottom of said table adjacent an edge thereof to permit movement of said surgical table in a horizontal plane about said support arm and console to various adjusted positions about said console;
   d. a radial arm having one end journaled adjacent floor surface and a second end pivotally connected to said console, said console being movable along the floor surface through an articulate path of travel of a radius of which is said radial arm and said console being movable in a horizontal plane about said radial arm second end to various adjusted positions with respect to said radial arm;
   e. a plurality of utility service lines extending through said radial arm for delivering utilities from a source remote from said radial arm to said outlets on said console.

2. A surgical patient support as in claim 1 including drive means on said radial arm for moving said radial arm and therefore said pedestal through said arcuate path of travel.

3. A mobile surgical patient support as set forth in claim 1 wherein said radial arm other end is journaled adjacent the floor surface at a point adjacent an opening into the operating room to permit arcuate movement of said radial arm and therefore said console through the opening and out of the operating room.