PERLOVE MEDICAL

SPINE SURGICAL NAVIGATION SYSTEM

The next episode of digital surgery

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PL300B

Precision·Efficiency·MIS

Elite in details

Optical measurement camera

Tracking and navigating in sub-millimeter accuracy

Pre-op planning system

Screws' trajectory and position planning

29 inches workstation monitor

Displaying real-time modified plan and mechanical sensor feedback

Overall tracking/processing unit

Overall design of workstation and optical measurement camera helps to maximize space in the OR

34 inches LCD surgical monitor

Large angle rotatable and large size LCD monitor for easy image reviewing

3D reference marker

Navigate the instrumentation guide to the right position through pre-op plan

6-way directional moving robotic arm

State-of-art robotic arm and built-in force sensor provide high accruate instrumentation

Self-adaptive calibration

Perlove Medical is the first manufacturer in China that combines intraoperative 3D imaging C-arm and spine surgical navigation system.

Equipped with the intraoperative 3D imaging C arm system which independently developed and produced by Perlove, PL300B, which integrated with self-adaptive calibration technology, can realize image automatic registration, and automatically establishes the association of three coordinate systems, the optical position gauge, the patient and the image.

No manual intervention is required in registration process, and the accuracy is not affected by the image quality. It brings stronger system compatibility, more accurate coordination matching and more convenient calibration.

Precision treatment

Pre-op surgical planning

The software utilize 3D image to make surgcial plan for the ideal screw position, calibers and instrumentation trajectory.

Self navigation

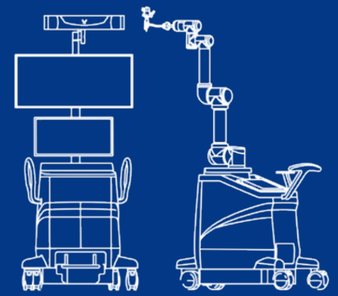
Surgical arm can be precisely sent to the right position through well planned trajectory, ensuring consistency between pre-op surgical plan and intra-op surgical outcome.

Real time motion tracking

Real time motion tracking and position modifying, ensuring precise screw placement.

High-precision robotic arm

The smart navigation system and robotic arm deliver high degree of accuracy, effectively decreasing complication rate and revision rate.

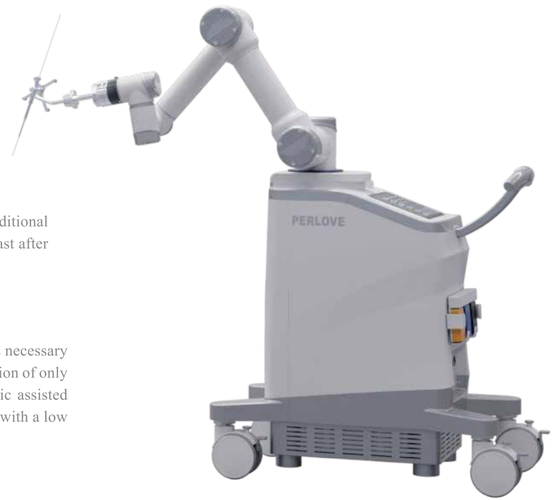


Positioning with accuracy

Equipped with cutting-edge optical tracking sensor and robotic arm, PL300B utilize intraoperative 3D based image to make pre-operative plan, allowing surgeon to perform spinal MIS with submillimeter accurate navigation. Especially for high-risk and complex procedure, it has obvious advantages and can effectively reduce surgical risk.

Extend the capability of MIS

Minimally Invasive



Percutaneous fixation

With the reference percutaneously fixed to the patient, additional injury can be largely avoided, making the patient recovery fast after the surgery.

Small incision

In traditional open approach spinal surgery, wider incision is necessary to expose enough anatomy for surgeon. However, small incision of only 1-2cm will give enough space for instrumentation in robotic assisted surgery, saving 50% surgical time, reducing 95% blood loss with a low complication rate.

Simplify surgical workflow

Optimized surgical workflow

PL300B is capable to have multiple pedicle screws trajectory planned in a single operation compared with traditional open approach, saving surgical time spent and improving screw placement efficiency.

Standardized surgical workflow

User friendly navigation software interface, eliminating uncertainty of complex spinal surgery, creating a standardized surgical workflow with reduced learning curve.

Simplication Multi-purpose

Multiple vetebral levels planning

Planning for multiple vertebral levels, enabling visualization of entry point, screw angle and trajectory for various spinal procedure (e.g. PKP, LIF)

Intelligent surgical experience carry out safe and convenient surgical outcome

Overall roll cart design

Overall design of optical camera and monitor cart brings out smaller footprint and more flexible maneuverability.

Articulating monitors

Medical grade articulating monitors provide multiple observation perspective with delicacy clarity.

Stable surgical plan operation

Precise surgical planning operation carried out by robotic arm, greatly saving surgeon's enegry in long duration operation.

Human-machine collaboration

Surgical plans are conducted by surgeon and carried out by navigation system.

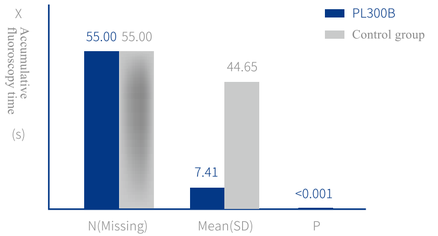
Motion simulation and mechanical sensor

Built-in motion simulation and mechanical sensor enable the robotic arm to stop moving immediately when it encounters an obstacle, preventing collision accident.

Lower radiation level Shorter surgical duration

Reduce radiation absorption

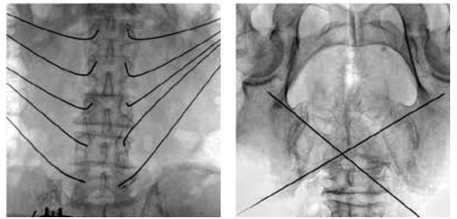
In robotic-assisted surgery, the total amount of radiation dose, fluoroscopy duration and times are greatly reduced, bring safety and care for both patient and surgeon.



The radiation level in robotic assisted surgery is only 18% of free hand surgery

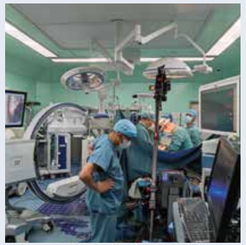
Improved surgery efficiency

The fluoroscopy time for each screw placement in robotic assisted surgery is 2.3s compared with 39s in free hand surgery, which greatly reduce operative time, improving 30% surgery efficiency.



T2, T4 pedicle screw fixation in robotic-assisted surgery

Description : Male, 45 years old
Surgery : Spinal tumor separation with T2, T4 pedicle screw fixation
Numbers of screws : 4



View of OR

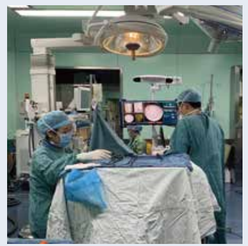
Surgery planning

K wire insertion

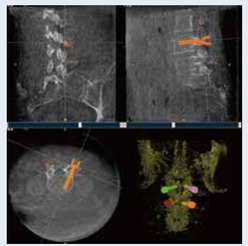
Pedicle screw placement

L4, L5 pedicle screw fixation in robotic assisted surgery

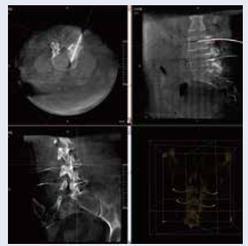
Description : Female, 50 years old
Surgery : L4, L5 pedicle screw fixation
Numbers of screws : 4



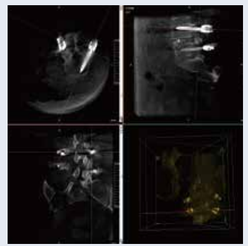
View of OR



Surgery planning



K wire insertion



Pedicle screw placement