

リアルタイム腹腔鏡下肝切除術ナビゲーションシステムの開発

Development of real-time laparoscopic hepatectomy navigation system

従来の手術支援システムではできなかったリアルタイム腹腔鏡下肝切除手術ナビゲーションシステムを開発し、腹腔鏡下肝切除術における手術支援システムの高度化を図り、手術の安全性と正確性を担保する。

We will develop a real-time laparoscopic hepatectomy surgery navigation system that could not be done with conventional surgery support system.

And we will further advance the surgery support system in laparoscopic hepatectomy, to ensure the safety and accuracy of surgery.

これまでの研究成果

Research Results

外科教育の効率化、魅力ある外科教育の構築を目的に次世代型コンピュータ外科手術支援に取り組んできた。 We are creating the next-generation computer guided surgery system for construction of attractive and efficient surgical education.

●LiverSIM Simulator

Encountered-Type Haptic Interface for Representation of Shape and Rigidity of 3D Virtual Objects

●Haptics System

Development of the Haptic Device for a Hepatectomy Simulator

●Frame Model

A novel three-dimensional print of liver vessels and tumors in hepatectomy

●Surgery Textbooks

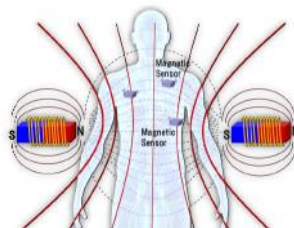
Dynamic Surgical Textbook for New Surgery Education



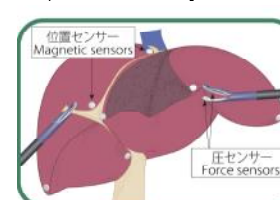
ナビゲーションシステム

Navigation System

術者は実際に今どの部位を手術していて、今後どのように手術を進めて行けば良いのか、navigationに従って行うことができる。予定切離線を外れた場合や組織損傷の危険がある場合は警告を受け修正する。



位置センサー (Magnetic sensors)



The surgeon can understand which part the surgeon is actually operating and how to proceed with the operation in the next according to the navigation. Furthermore, you can receive a warning sign if the incision is out of the cutting line, or if there is a risk of tissue damage.

AMED 支援事業として次のステージへ To the next stage as an AMED grant program

