Right diaphragm resection using a ball-type electrode and soft coagulation for advanced ovarian cancer: techniques and tips

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Complete resection is important to improve the prognosis of advanced ovarian cancer. The efficacy of the soft coagulation mode built into the VIO system has been reported in hepatic and pancreatic surgeries and in retroperitoneal lymphadenectomy.^{1–3} However, there are no reports or surgical videos regarding the VIO system in cytoreductive surgery. In this video, we demonstrate the use of a ball-type electrode of this system for diaphragm resection in advanced ovarian cancer.

VIO 300 D (ERBE Elektromedizin GmbH, Germany) provides the minimum required output depending on tissue resistance. We applied the automatic output control function and the blunt peeling effect of the ball-type electrode to diaphragm stripping. Since the ball shape has a wide contact area with the tissue and a low current density, excessive incision effects can be avoided. In the auto-cut mode of this system, the required current can be supplied instantaneously, and spark discharge can be adjusted to the needs of the situation. In the soft coagulation mode, the automatically controlled low voltage enables effective hemostasis without spark generation, tissue carbonization, or adhesion.

In case 1, involving a 65-year-old woman with stage IIIC ovarian cancer, stripping of the diaphragm was difficult with a conventional electric scalpel due to dissemination and fibrosis. The diaphragmatic peritoneum was stripped smoothly using a ball-type electrode. In case 2, involving a 72-year-old woman with stage IVB ovarian cancer with a large subphrenic tumor invading the liver, we excised the liver with an electric scalpel, and complete hemostasis was achieved by soft coagulation without suture.

The ball-type electrode and soft coagulation of the VIO system helped us perform a smooth resection of the diaphragm and ensure hemostasis in cytoreductive surgery for advanced ovarian cancer.

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Video 1

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