Omental flap transplantation

- Omentomyelopexy for the Treatment of a Persistent Lumbar Pseudomeningocele: A Case Report With Technical Note
- Clinical effects of pedicled omental flap transplantation in repairing secondary rejection wounds after brain pacemaker implantation
- Cranial transposition and revascularization of autologous omentum: a novel surgical technique for resection of recurrent glioblastoma multiforme
- Ten-year experience with laparoscopic pedicled omental flap for cerebral revascularization in patients with Moyamoya disease
- The Application of an Omentum Graft or Flap in Spinal Cord Injury
- Dural Reconstruction Using Laparoscopic Gastro-omental Free Flap in Refractory Cranial Infections
- Pedicled omental flaps in the treatment of complex spinal wounds after en bloc resection of spine tumors
- Laparoscopic harvesting of omental pedicle flap for cerebral revascularization in children with moyamoya disease

Omental flap transplantation, also known as omental flap surgery or omentoplasty, is a surgical procedure in which a surgeon transfers a section of the omentum, a fold of the peritoneum (the membrane lining the abdominal cavity), to another area within the body to promote healing, provide blood supply, or address various medical conditions. The omentum is rich in blood vessels and has regenerative properties, making it a useful tissue for transplantation.

Common uses and applications

Reconstruction After Surgery or Trauma: Omental flaps can be used to reconstruct or repair tissue that has been damaged due to surgery, injury, infection, or other medical conditions. The omentum can help promote healing by providing a well-vascularized tissue with regenerative potential.

Treating Fistulas: Omental flaps can be used to close fistulas, abnormal connections or passageways between different organs or tissues, often caused by infection or injury. The omentum can be used to seal off these abnormal tracts.

Radiation Injury: In some cases, radiation therapy for cancer treatment can damage surrounding tissues and blood vessels. Omental flaps may be used to restore blood supply and promote healing in radiation-damaged areas.

Treating Infections: Omental flaps can be used to isolate and treat infected areas within the abdominal cavity or elsewhere in the body by providing a source of healthy tissue with a good blood supply.

Wound Healing: Omental flaps can be utilized in complex wound cases, such as non-healing ulcers or tissue loss, to facilitate healing and tissue regeneration.

The procedure typically involves making an incision in the abdominal wall, dissecting a section of the

omentum, and transferring it to the target area, where it is surgically attached. Omental flap transplantation requires careful surgical planning and is often performed by skilled surgeons with experience in microvascular surgery.

The choice to use an omental flap depends on the specific medical condition and the patient's individual needs. It offers a potential solution in cases where other treatments or surgical options have been exhausted, and it can provide valuable therapeutic benefits due to the omentum's regenerative and vascular properties.

Doron et al. reported on a new technique to bypass the blood-brain barrier after re-resection and potentially to allow tumor antigens to be surveilled by the immune system. The study aims to assess the feasibility of performing a cranial transposition and revascularization of autologous omentum after the re-resection of glioblastoma multiforme. The laparoscopically harvested omental-free flap was transposed to the resection cavity by a team consisting of neurosurgeons, otolaryngologists, and general surgeons. This was done as part of a single-center, single-arm, open-label, phase I study. Autologous abdominal omental tissue was harvested laparoscopically on its vascularized pedicle in 2 patients, transposed as a free flap, revascularized using an external carotid artery, and carefully laid into the tumor resection cavity. Patients did well postoperatively returning to baseline activities. Graft viability was confirmed by a cerebral angiogram. Omental cranial transposition of a laparoscopically harvested, vascularized flap, into the cavity of re-resected Glioblastoma patients, is feasible and safe in the short term. Further studies are needed to ascertain whether such technology can improve progression-free survival and overall survival in these patients ¹⁾.

examines the efficacy of autologous omentum, either as a flap (with vascular connection intact) or graft (severed vascular connection), on spinal nerve regeneration. After contusive SCI in rats, a thin sheath of omentum was grafted to the injured spinal cord.

Results: Omental graft improved behavior scores significantly from the 3rd to 6th week after injury (6th week, 5.5 ± 0.5 vs. 8.6 ± 1.3 , p < 0.05). Furthermore, the reduction in cavity and the preservation of class III β -tubulin-positive nerve fibers in the injury area was noted. Next, the free omental flap was transposed to a completely transected SCI in rats through a pre-implanted tunnel. The flap remained vascularized and survived well several weeks after the operation. At 16 weeks post-treatment, SCI rats with omentum flap treatment displayed the preservation of significantly more nerve fibers (p < 0.05) and a reduced injured cavity, though locomotor scores were similar.

Conclusions: Taken together, the findings of this study indicate that treatment with an omental graft or transposition of an omental flap on an injured spinal cord has a positive effect on nerve protection and tissue preservation in SCI rats. The current data highlight the importance of omentum in clinical applications².

Omental flap transplantation for Moyamoya disease

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Omental flap transplantation for Wound healing

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Omental flap transplantation for Wound healing.

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Doron O, Chen T, Wong T, Tucker A, Costantino P, Andrews R, Langer DJ, Boockvar J. Cranial transposition and revascularization of autologous omentum: a novel surgical technique for resection of Glioblastoma recurrence multiforme. Neurosurg Rev. 2022 Mar 24. doi: 10.1007/s10143-022-01767-7. Epub ahead of print. PMID: 35325296. 2)

Fay LY, Lin YR, Liou DY, Chiu CW, Yeh MY, Huang WC, Wu JC, Tsai MJ, Cheng H. The Application of an Omentum Graft or Flap in Spinal Cord Injury. Int J Mol Sci. 2021 Jul 25;22(15):7930. doi: 10.3390/ijms22157930. PMID: 34360697; PMCID: PMC8347514.

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