Non-Endoscopic Minimally Invasive Radial Artery Harvesting: Initial Experience (NEMIRA)

Leonid Ruderman, Oren Lev-Ran, Menachem Matsa, Dan Abrahamov, Yael Refaely, Lior Raichel, Jafar Aslih, Shlomo Yaron Ishay, Gideon Sahar
Cardiothoracic Surgery Department, Soroka Medical Center, Israel

Background:
Traditional open RA harvesting warrants long incision, risks lateral antebrachial cutaneous nerve injury and is occasionally associated with unsatisfactory cosmetic results. Endoscopic techniques are time-consuming and conduit-quality is often inadequate.

Methods:
Between March and June 2012, 10 patients underwent less invasive non-endoscopic left RA harvesting by use of short sequential incisions. Contradictory to open technique, the overlying antebrachial fascia was only partially opened. The data of these patients were compared to matched-patients undergoing conventional RA harvesting.

Results:
With the exception of modified-blade cold light retractor system (Vario, Ausculap Inc. PA, USA) regular non-designated equipment was used. The mean harvest time was comparable with open technique (46±13 vs 35±10 minutes). The mean harvested RA length was 18.4±1.4 cm vs 19.6±2.2, allowing for average 1.4 ± 0.3 RA anastomoses; in patients averaging 166±10cm in height and 26.6±5.2 Kg/m^2 body mass index. Accumulative length of skin incision was 11±0. cm (range 9.5-12.5 cm) (subdivided by 3 incisions), significantly shorter than open technique (22±2 cm) (50% incision length). No open conversions were required and all RA conduits were used as bypass grafts following quality control. There were no infectious or serous wound complications. Parasthesia sensation, initially evident in 2/10 patients, was spontaneously resolved by three weeks.

Conclusions:
This technique improves cosmetic results, facilitates wound healing and is not time-consuming. RA conduits are compatible in quality and length. Partial opening of the antebrachial fascia and modified limited skin incisions may obviate development of subdermal dead space and injury to the lateral antebrachial cutaneous nerve, respectively.