Letter to the Editor

Surgery for T4 non-small cell lung cancer

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Keywords: Non-small cell lung cancer; T4 tumors; Surgery

We read with interest the recent article [1] in the journal on surgical resection of T4 non-small cell lung cancer (NSCLC). We agree with Pitz et al. that T4 tumors are a heterogeneous group of tumors and need to be treated on an individual basis. Thoracic surgeons and oncologists should understand that not all T4 tumors are to be considered similar to the clearly more advanced N3 disease (both stage III B) and treated with palliative intent.

However, we feel that the article should have emphasized that the 89 patients considered in the study constitute a highly selected group. Rather than the 2009 consecutive patients with NSCLC treated with surgical resection in the department, a more valid statistic would be the total number of T4 NSCLC patients who presented to the department over the same timeframe. This would give a realistic estimate of the small proportion of patients with T4 tumors who can be considered for surgical resection. The key message of the article should not be that T4 tumors are resectable and have a reasonable long-term survival, but that among carefully selected patients (preferably with the broad selection criteria specified), long-term survival is possible.

We disagree with the authors when they advocate a metastatic workup only in patients with symptoms of metastases. Patients with T4 tumors have a relatively high incidence of occult metastases and warrant a complete metastatic workup if they are being considered for curative surgery. This is in contradistinction to patients with T4 tumors being considered only for palliative treatment wherein the metastatic workup would clearly be dictated by the patient’s symptoms. Surgery in patients with locally advanced T4 tumors is a not-inconsiderable exercise and these patients should have rigorous screening for distant metastases (including PET-CT, where available) to rule out M1 disease. Operating on patients with occult M1 disease would unfairly negate the positive results of surgical resection.

Considering the long-term results quoted in the study, we wonder why the postoperative deaths were excluded from the 5-year survival figures. This gives an unduly optimistic estimate of outcome after surgical treatment of an advanced cancer. We believe that the overall 5-year survival figures given should also take treatment (surgery)-related deaths into consideration. Incidentally, the better survival seen in patients with N2 disease (better than N0 and N1) appears to be a chance finding given the small number of patients.

We agree with the authors that multimodality treatment regimes may improve the overall outcome in these patients. Our own approach in patients with T4 tumors with a good performance status is to treat them primarily with neoadjuvant chemotherapy. Patients who respond to chemotherapy and who have resectable tumors are offered surgery whereas others are treated with radiotherapy. In summary, the authors deserve to be congratulated on bringing out an important message that not all patients with T4 tumors warrant a nihilistic therapeutic approach.

Reference


* The authors of the original paper [1] were invited to comment on this Letter to the Editor but declined the offer.

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Letter to the Editor

Coronary artery tourniquet and shunting: acute effects and wall damage

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Keywords: Coronary artery wall; Off-pump surgery; Left anterior descending
We read with great interest the article by Wippermann and associates [1]. Wippermann and coauthors analysed the coronary artery wall and endothelial damages provoked by tourniquet occlusion and intraluminal shunt in an experimental off-pump surgery animal model. In a group of six pigs, the left anterior descending (LAD) was snared and tightened for 20 min, while in another group of six pigs, the LAD was shunted and after 20 min of reperfusion the shunt was removed and the coronary artery repaired. The authors observed that none of the untreated coronary artery segments exhibited endothelial lesions larger than grade II; at light microscopy, five of the snared group and three of the shunted group showed intimal damages, and all six of the snared group and two of the shunted group had signs of endothelial abrasion at scanning electron microscopy. Therefore, they concluded that shunting is less traumatic than tourniquet snaring in off-pump surgery, although careful manipulation is essential to limit underhand complications. The stated limitation of their study was essentially the health coronary artery tree, thus the lack of native atherosclerotic lesions pre-disposing further intimal injuries. The authors overcome this limitation discussing that Hangler et al. [2] obtained similar results, testing the snaring effect on coronary artery of patients affected by ischemic cardiomyopathy prior to heart transplantation. After informed consent was obtained and prior to heart transplantation, we have used as model to test the effects of these devices the LAD of eight patients affected by post-ischemic dilated cardiomyopathy [3]. Opposed to Hangler, who snared the coronary vessels during cardiopulmonary bypass, thus with an unloaded heart, we snared, opened, and shunted the LAD with a beating heart mimicking a real off-pump coronary artery bypass (OPCAB) procedure. Shunting always determined a brushing effect with grade II injuries, and the more atherosclerotic vessel the larger endothelial denudation effect [3]. On the contrary, snares used gently around the coronary artery to occlude the vessel appeared to achieve effective haemostasis, when tightened around an atherosclerotic or fibrotic coronary artery segment we observed an endothelial cell loss and atherosclerotic plaque fracture (grade III).

In conclusion, we think that shunting and snaring during OPCAB are both at risk, and the more diseased atherosclerotic vessel is the higher is the damage to the coronary wall during vessel manipulation. Therefore, full knowledge of the effect of these devices is advisable and these human and animal, acute experimental and chronic studies are all welcome.

Reference


Reply to the Letter to the Editor

Reply to Bottio and Gerosa

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Keywords: Coronary artery snaring and shunting

I fully agree to the recommendation for further studies to evaluate all effects of the occlusion devices in OPCAB surgery. To look what is behind the acute phase we started to investigate the chronic ultrastructural effects of temporary intraluminal shunt (TILS) and tourniquet occlusion (TOUR) on coronary vessels’ wall. In our study (still unpublished) we could indeed demonstrate a ‘brushing-effect’ on the endothelium caused by TILS, which is described by Gerosa et al. [1], but this endothelial injury was transient. After 3 months the intima was almost entirely reendothelialised, whereas loss of endothelial cell coverage was still detectable in the TOUR group. So we think that TILS is superior regarding intimal integrity in contrast to TOUR.

Reference