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Lung cancer screening

Italian screening trial improves diagnostic accuracy using a defined clinical algorithm

J Thorac Oncol. 2013 Jul;8(7):866-875. Four-Year Results of Low-Dose CT Screening and Nodule Management in the ITALUNG Trial. [Pegna AL](#), [Picozzi G](#), [Falaschi E](#), [Carozzi L](#), [Falchini M](#), [Carozzi FM](#), [Pistelli F](#), [Comin C](#), [Deliperi A](#), [Grazzini M](#), [Innocenti F](#), [Maddau C](#), [Vella A](#), [Yaggelli L](#), [Paci E](#), [Mascalchi M](#); for the ITALUNG Study Research Group. *Pneumology Department, Careggi Hospital, Florence, Italy; †Radiodiagnostic Unit, Institute for Oncological Study and Prevention, Florence, Italy; ‡2nd Radiology Department, University Hospital of Pisa, Italy; INTRODUCTION:: Recruitment and nodule management are critical issues of lung cancer screening with low-dose computed tomography (LDCT). We report subjects' compliance and results of LDCT screening and management protocol in the active arm of the ITALUNG trial. METHODS:: Three thousand two hundred six smokers or former smokers invited by mail were randomized to receive four annual LDCT (n = 1613) or usual care (n = 1593). Management protocol included follow-up LDCT, 2-[F]fluoro-2-deoxy-D glucose positron emission tomography (FDG-PET), and CT-guided fine-needle aspiration biopsy (FNAB). RESULTS:: One thousand four hundred six subjects (87%) underwent baseline LDCT, and 1263 (79%) completed four screening rounds. LDCT was positive in 30.3% of the subjects at baseline and 15.8% subsequently. Twenty-one lung tumors in 20 subjects (1.5% detection) were found at baseline, and 20 lung tumors in 18 subjects (0.5% detection) in subsequent screening rounds. Ten of 18 prevalent (55%) and 13 of 17 incident (76%) non-small-cell cancers were in stage I. Interval growth enabled diagnosis of lung cancer in 16 subjects (42%), but at least one follow-up LDCT was obtained in 741 subjects (52.7%) over the screening period. FDG-PET obtained in 6.5% of subjects had 84% sensitivity and 90% specificity for malignant lesions. FNAB obtained in 2.4% of subjects showed 90% sensitivity and 88% specificity. Positivity of both FDG-PET and FNAB invariably predicted malignancy. Surgery for benign lesions was performed on four subjects (10% of procedures) but followed protocol violations on three subjects. CONCLUSIONS:: High-risk subjects recruited by mail who entered LDCT screening showed a high and stable compliance. Efficacy of screening is, however, weakened by low detection rate and specificity. Adherence to management protocol might lessen surgery for benign lesions.

Editor's commentary: This trial is a lung cancer screening trial which incorporated several management strategies for positive scans which appears to have improved detection of cancer while minimizing false positives. Their strategies included repeat scanning for positive nodules in one month after a course of antibiotic treatment; abandonment of SUV in favor of simple visual assessment of PET scan results; reading of positive scans by two experienced radiologists; and, a very accurate FNAB with rapid on-site cytology examination. In my opinion, these particular strategies are very close to current practice in the community for evaluation of lung nodules and is probably closer to what we would expect if lung cancer screening ever becomes widespread in this country.

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Malignant pleural effusion

VATS PleurX catheter insertion found to be as effective as VATS talc pleurodesis

Ann Thorac Surg. 2013 Jul;96(1):259-64. A propensity-matched comparison of pleurodesis or tunneled pleural catheter in patients undergoing diagnostic thoracoscopy for malignancy. [Freeman RK](#), [Ascoti AJ](#), [Mahidhara RS](#). Department of Thoracic and Cardiovascular Surgery, St Vincent Hospital, Indianapolis, Indiana. Electronic address: rfreeman@corvascmds.com. BACKGROUND: Patients with a suspected malignant pleural effusion occasionally require thoracoscopy to achieve a diagnosis. It is unclear whether chemical pleurodesis or the placement of a tunneled pleural catheter (TPC) that can be used for intermittent pleural drainage produces superior palliation, a shorter hospital stay, and less morbidity. This investigation compares these 2 treatment groups. METHODS: Patients with a recurrent, symptomatic, pleural effusion suspected of having a malignant etiology who underwent a thoracoscopic exploration after at least 2 nondiagnostic thoracenteses were identified. Two patient groups were formed, comprised of patients who received either talc pleurodesis or a TPC at the conclusion of the procedure, using propensity matching. Patient demographics, length of stay, interval until the initiation of systemic therapy, need for further intervention for the pleural effusion, and procedural morbidity and mortality were collected and compared. RESULTS: Over a 6-year period, 60 patients undergoing treatment were identified and propensity matched. No significant differences in mean age or palliation from their effusion were identified. However, the group treated with TPC realized a significantly shorter hospital stay and interval to systemic therapy for their malignancy as well as a lower rate of operative morbidity than patients undergoing talc pleurodesis. CONCLUSIONS: This investigation found that a TPC provided palliation of patients' malignant pleural effusions and freedom from reintervention equal to that of talc pleurodesis after thoracoscopy while resulting in a shorter mean length of hospital stay and interval to the initiation of systemic therapy. Lower rates of operative morbidity were also seen in the TPC treatment group. This method of palliation of a malignant pleural effusion should be considered when diagnostic thoracoscopy reveals a malignant pleural effusion.

Editor's commentary: This is a retrospective, propensity matched study of VATS talc pleurodesis vs. VATS insertion of a PleurX catheter. It showed similar outcomes with shorter hospital stays and quicker times to systemic treatment for the PleurX catheters. In my experience, PleurX catheters are a complimentary option to talc pleurodesis, and I will occasionally combine the two. I find that a tunneled catheter can solve two of the vexing issues of talc pleurodesis: a hospital stay that requires CT drainage, as well as incomplete pleurodesis.

Thymoma

Is removal of the entire thymus necessary in early stage thymoma?

J Thorac Oncol. 2013 Jul;8(7):952-8. Is thymectomy necessary in nonmyasthenic patients with early thymoma? [Tseng YC](#), [Hsieh CC](#), [Huang HY](#), [Huang CS](#), [Hsu WH](#), [Huang BS](#), [Huang MH](#), [Hsu HS](#). Department of Surgery, Division of Thoracic Surgery, Taipei Veterans General Hospital, National Yang-Ming University School; †Division of Biostatistics, Institute of Public Health, and ‡Institute of Emergency and Critical Care Medicine, National Yang-Ming University School of Medicine, Taipei, Taiwan. BACKGROUND: In thymoma patients without myasthenia gravis, it is debatable whether thymectomy should be performed in addition to thymomectomy, the procedure in which the thymoma alone is resected. In this study, we proposed to compare the surgical results in early-stage nonmyasthenic thymoma patients who underwent thymomectomy with and without extended thymectomy. METHODS: A total of 95 patients without clinical evidence of preoperative myasthenia gravis, who underwent surgery for early-stage thymoma (stages I and II), were selected for the study. Thymomectomy with extended thymectomy was performed through median sternotomy on 42 patients, whereas thymomectomy without thymectomy was carried out through video-assisted thoracoscopic surgery (VATS) or thoracotomy in 53 patients. Outcomes and surgical complications were compared between the two patient groups. RESULTS: The median duration of the follow-up was 57 months (6-121 months). Three patients, one in the thymomectomy group (1.9%) and two in the thymomectomy with thymectomy group (4.5%), developed tumor recurrences. Tumor recurrence rates between the two groups were not significantly different. During the follow-up period, we did not document the development of postoperative myasthenia gravis in any of the patients enrolled. Postoperative opioid use, the number of days of drainage, and hospitalization length were lower in patients undergoing thymomectomy through thoracotomy or VATS. CONCLUSIONS: In early-stage nonmyasthenic thymoma patients, thymomectomy without thymectomy through thoracotomy or VATS was associated with lower morbidity and shorter hospitalization, than thymomectomy with extended thymectomy. Postoperative myasthenia gravis did not develop in any of the patients enrolled in our study during the 57-month median follow-up period. Overall tumor recurrence rates were not significantly different between these two patient groups. On the basis of our results, we conclude that thymomectomy without thymectomy through thoracotomy or VATS is justified for early-stage nonmyasthenic thymoma patients, and longer follow-up is needed to investigate the necessity of thymectomy in this group.

Editor's commentary: This is a provocative report that challenges existing surgical doctrine that radical thymectomy is required for all resectable thymomas. I have to agree that I find it tempting to forgo total thymectomy when the lesion is small and encapsulated. However, using the robotic technique, I find that total thymectomy is usually easily achieved anyway. What I think this report really shows is how limited a thoracoscopic thymectomy is when compared to open (or the robotic) alternative.

Esophagectomy: a tale of two leaks

It has long been taught that an intrathoracic leak following Ivor-Lewis esophagectomy is considered a life threatening and devastating complication. While this scenario certainly is possible, this has not really been my experience. Leaks do occur, but I find they can usually be managed without dire consequences. Here are two such complications identified early, and addressed promptly, with good outcomes.

Patient #1: an 85 yo WM patient was referred for evaluation after work up for a male breast cancer identified a RLL NSCLC, as well as an early stage GE junction cancer. He underwent combined Ivor-Lewis esophagectomy with simultaneous RLL lobectomy. His postoperative course was smooth but his routine postoperative swallow showed a leak at the anastomosis with pooling dependently in the right hemithorax. (CT scan and swallow below). He was drained in the OR with 11th rib removal and insertion of CT and discharged from the hospital on tube feeds. This tube was removed in the clinic and he enjoys a regular post-esophagectomy diet and is otherwise doing well.



Patient #2: This patient is a 66 yo WF who was referred with a distal esophageal cancer. Her Ivor-Lewis was complicated by persistent drainage from the right chest tube and her swallow showed a large leak (see below). She was taken back to the operating room where her anastomosis was found to be incomplete secondary to a loose suture. This was remedied at re-operation and repeat swallow showed a normal appearance following esophagectomy. She currently enjoys a regular post-esophagectomy diet.



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