Critical appraisal of lung metastasectomy  
Friday 15th November 10:50 – 11:05

Central to current practice in the management of successfully operated colorectal cancer is regular surveillance to detect recurrence. In this meeting it is resection of liver and/or lung metastases that concerns us. For lung metastasectomy at a population level the best and perhaps the only contemporary data are those from the Spanish study by Grupo Español de Cirugía Metástasis Pulmonares de Carcinoma Colo-Rectal (GECMP-CCR).[1] All patients who had lung metastasectomy between March 2008 and February 2010 were entered in the study register. Data are available from 32 thoracic surgical units on 543 patients. They were 65 years old on average and 65% were men. The metastasis was solitary in 55%, the median interval between the primary resection and lung metastasectomy was 28 months, carcinoembryonic antigen (CEA) was not elevated in the majority and in 29% there was metastatic liver disease at some point prior to the lung metastasectomy.

A policy of actively seeking recurrence of colorectal cancer with a view to surgery originated in the 1950s.[2] The “Wangensteen approach” was to perform an elective “second look” laparotomy 6-8 months after their primary resection had. Any recurrence found was resected. The policy spread and Bacon and Berkley from Philadelphia wrote in 1959 that a “defeatist attitude towards recurrence no longer can be held tenable”. [3] By the 1970s several other groups reported cures and high survival rates amongst patients undergoing second-look laparotomy attributed to the further surgery.[4-6] But others found the results of “aggressive” clinical surveillance disappointing.[7] In an analysis of 180 patients followed from six months to 15 years, at a total of 2319 out-patient clinic visits, only one patient could be considered to have had a curative second-look operation.[8]

Hopes moved to the use of CEA monitoring to detect recurrence earlier and to spare patients without elevated CEA a negative “second-look” laparotomy. A randomised controlled trial (RCT) showed no survival advantage.[9] Those randomly allocated to not have a second-look operation lived as long and were spared the burden of further investigations and surgery from which they derived no benefit. Included in the RCT protocol written in 1982 was full mobilisation of the liver with a view to liver resection. The subsequent history of liver resection[10] is a matter for later in the programme.

Lung metastasectomy for osteosarcoma was following a separate but parallel line of reasoning. Osteosarcoma occurs at younger age and metastasises to the lung in 50-60% of cases. These two features prompted thoracic surgeons to consider pulmonary metastasectomy from the mid-1960s and led Memorial Sloan-Kettering Cancer Centre to promote this as the “treatment of choice”. [11] For abdominal
surgeons engaged in “second-look” surgery the target had been loco-regional recurrence; the liver was an extension of this policy but the lung was out of their reach. A report in 1979 from MSKCC of a series of 35 pulmonary metastasectomy operations for colorectal cancer is regarded as the seminal paper for pulmonary metastasectomy in the growing movement for surgery of recurrent colorectal cancer.[12] There are sporadic case histories of the surgical resection of lung metastases as far back as 1927 and even 1882 but it is the MSKCC report that marks the introduction of pulmonary metastasectomy for colorectal cancer into clinical practice.

Later presentations will deal with the current practice of lung and liver metastasectomy and the evidence for it but it is chastening to consider that the only RCT exploring the effectiveness of surgery for recurrence of colorectal cancer found that it did more harm than good.[9] The Spanish philosopher George Santayana (1863-1952) wrote: "Those who cannot remember the past, are condemned to repeat it" so it may be timely to recall this RCT, probably the only secure piece of evidence that we have.
Reference List


