

ASCS Bangkok 17th Jan 2009

Approach to Colorectal Lung Metastases

R Sim

Centre for Advanced

Laparoscopic Surgery, TTSH



How Uncommon are Isolated Lung Metastases in Colorectal Cancer? A Review from Database of 754 Patients Over 4 Years

Ker Kan Tan • Gilberto de Lima Lopes Jr. •
Richard Sim

Received: 13 August 2008 / Accepted: 12 November 2008
© 2008 The Society for Surgery of the Alimentary Tract

Abstract

Background It is commonly thought that colon cancer metastases to the lungs without involvement of the liver are rare.

Methods We performed a retrospective review of all patients with colorectal cancer diagnosed between December 2003 and August 2007 in Singapore. Isolated lung metastases were determined as (1) Definite if there was confirmed histology or cytology of the lung lesion(s) in the absence of liver lesions on CT scan, and (2) Probable if there were only radiological evidence suggestive of lung metastases rather than lung primary also in the absence of liver lesions on CT scan.

Results There were 196 patients with rectal and 558 patients with colon cancer (369 left-sided and 189 right-sided). There were 13 definite isolated lung metastases, and the remaining 43 were probable. Twenty-three (12%) patients with rectal cancer and 33 (6%) patients with colon cancer had isolated lung metastases (OR 2.11, 95% CI 1.21–3.70). Patients with \geq pT3 lesions (OR 1.92, 95% CI 0.75–4.93) and \geq pN1 (OR 1.56, 95% CI 0.86–2.83) were more likely to have isolated lung metastases.

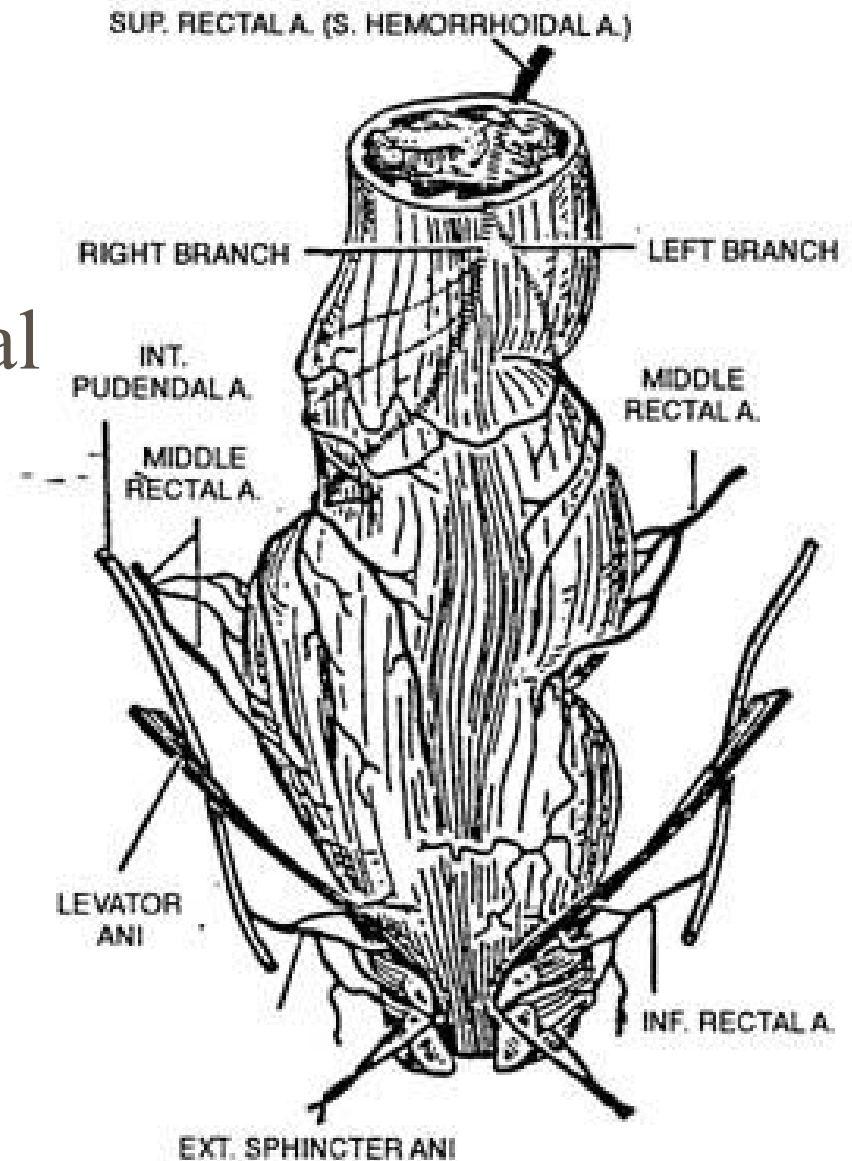
Conclusion The true incidence of isolated lung without liver metastases in colorectal cancer is likely to lie between 1.7% and 7.2%. While the incidence of isolated lung metastases is twice as common in patients with rectal cancer, it is still significant in patients with colon cancer. The absence of liver involvement should not preclude a search for lung metastases.



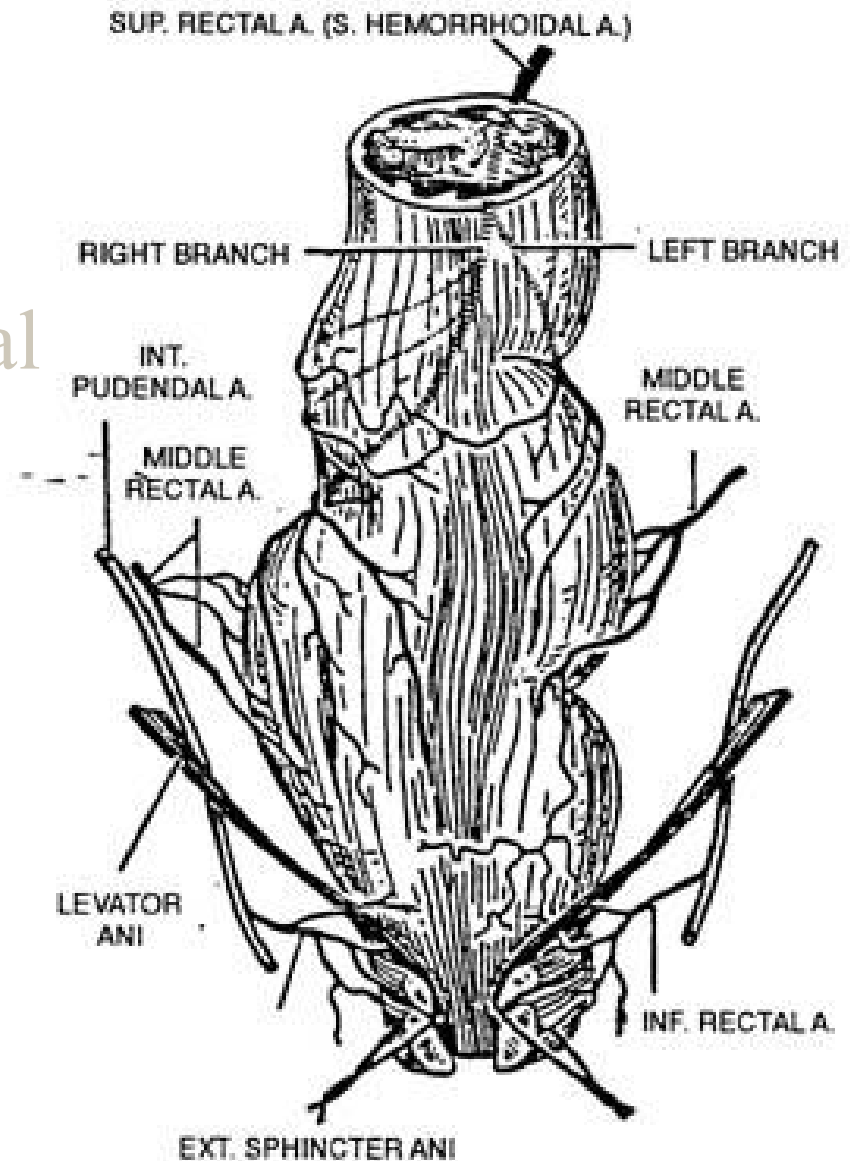
INTRODUCTION

- Lung metastases are seen in about 10 –15% of all colorectal cancer metastases
- Of these, only 10% are present in the absence of liver metastases

■ Isolated lung metastases is more common in rectal than colon cancers



- Isolated lung metastases is more common in rectal than colon cancers
- The inferior and middle rectal veins drains into the systemic circulation, bypassing the portal venous system





ISOLATED LUNG METASTASES

- 56 patients in total (7.4%)
 - 13 Definite
 - 43 Probable
- 33 Colon primary
- 23 Rectal primary



ISOLATED LUNG METASTASES

- 13 Definite
 - 8 Cytological confirmation
 - 5 Histological confirmation
 - 4 Wedge resections
 - 1 Core Biopsy of lung lesion



ISOLATED LUNG METASTASES

- 13 Definite
 - 8 Cytological confirmation
 - 5 Histological confirmation
 - 4 Wedge resections
 - 1 Core Biopsy of lung lesion
- 43 Probable
 - 27 Bilateral Lung Nodules
 - 16 Unilateral Lung Nodule(s)



ISOLATED LUNG METASTASES

- Timing of diagnosis of isolated lung metastases:
 - 20 at diagnosis of primary
 - 36 during follow up (Up to 3 years)
 - 18 had rising CEA
 - 18 had normal CEA

RESULTS

- Analysis of patients with vs. those without isolated lung metastases was performed
- Only the site of the primary is significant

	(-) Isolated Lung Metastases	(+) Isolated Lung Metastases	OR (95% CI)
Colon	525 (69.6%)	33 (4.4%)	1.00
Rectal	173 (22.9%)	23 (3.1%)	2.11 (1.21 – 3.70)* * <i>p</i> : 0.011



CONCLUSIONS

- The true incidence of isolated lung metastases may range from
 - 3.1% to 11.7% in patients with rectal cancers
 - 1.3% to 5.9% in patients with colon cancers



CONCLUSIONS

- The true incidence of isolated lung metastases may range from
 - 3.1% to 11.7% in patients with rectal cancers
 - 1.3% to 5.9% in patients with colon cancers
- The absence of liver involvement should not preclude a search for lung metastases



CONCLUSIONS

- Search for lung metastases is recommended in all patients with rectal cancer, especially those with $\geq N1$




CONCLUSIONS

- Search for lung metastases is recommended in all patients with rectal cancer, especially those with $\geq N1$
- Suggested in selected patients with colon cancer, especially those with lesions $\geq T3$



CONCLUSIONS


- Search for lung metastases is recommended in all patients with rectal cancer, especially those with $\geq N1$
- Suggested in selected patients with colon cancer, especially those with lesions $\geq T3$
- Never neglect patients during follow up
 - with T2 or N0 disease
 - with normal CEA levels



Simultaneous detection of colorectal carcinoma liver and lung metastases does not warrant resection. Nagkura et al. J Am Coll Surg. 2001; 193(2):153-60.

N=136


RESULTS: Survival after hepatic and pulmonary resection was comparable with that after hepatectomy alone ($p = 0.536$) and that after pulmonary resection alone ($p = 0.294$). Among the 27 with hepatic and pulmonary resections, the outcomes after resection were significantly better in patients with sequentially detected metastases (cumulative 5-year survival of 44%) than in those with simultaneously detected ones (cumulative 5-year survival of 0%) ($p < 0.001$).



Simultaneous detection of colorectal carcinoma liver and lung metastases does not warrant resection. Nagkura et al. J Am Coll Surg. 2001; 193(2):153-60.

N=136

CONCLUSION: Sequentially detected hepatic and pulmonary metastases are good candidates for aggressive metastasectomy. Simultaneous detection of these metastases does not warrant resection.




Pulmonary resection of colorectal metastases in patients with or without a history of hepatic metastases. Joosten et al. Eur J Surg Oncol. 2008; 34(8):895-9.

N=39

CONCLUSION:


Resection of pulmonary colorectal metastases may improve survival, even in patients who underwent hepatic resection for colorectal liver metastases at an earlier stage.



Lung metastases after liver resection or cryotherapy for hepatic metastasis from colorectal cancer-there is a difference! Yan et al. HPB (Oxford) 2006; 8(2):124-31.

A patient who undergoes hepatic resection only has a probability of 35% for developing pulmonary recurrence, compared with 51% following cryotherapy.

Conclusion - There clearly is a higher risk of pulmonary metastasis after cryotherapy than after resection, whether this is related to selection of patients or a direct deleterious procedural effect requires more study.



Surgical Resection of Pulmonary Metastases From Colorectal Cancer: A Systematic Review of Published Series. Pfannschmidt, et al. Ann Thorac Surg 2007; 84: 324 -38.

N=17 studies, 1684 patients

- Radicality - 0.5-1.0 cm margin of normal lung tissue in all directions
- Mediastinal and hilar LNs
- Single vs multiple
- CEA, DFI, Histology
- VATS, RFA

To improve the outcome for patients with pulmonary metastatic colorectal cancer, new strategies based on intensive systemic chemotherapy combined with pulmonary metastasectomy should be evaluated in future prospective randomized studies.



Pulmonary metastasectomy for colorectal cancer: weak evidence and no randomised trials Treasure. Eur J Cardio-thoracic Surg 2008; 33: 300—302.

The practice of pulmonary metastasectomy is widespread.

There are no randomised outcome data to guide us.

We rely on presumed benefit based on comparison with poorly characterised survival estimates for other patients with advanced disease.



Conclusion

- **Selected group of patients with colorectal metastases limited to the lungs may benefit from pulmonary metastasectomy with a 5-year survival rate of up to more than 50%**