Lung Metastases from CRC

Marcelo Cypel MD, MSc, FACS, FRCSC
Professor of Surgery, Division of Thoracic Surgery
Toronto General Hospital, University of Toronto

UHN Toronto General Hospital

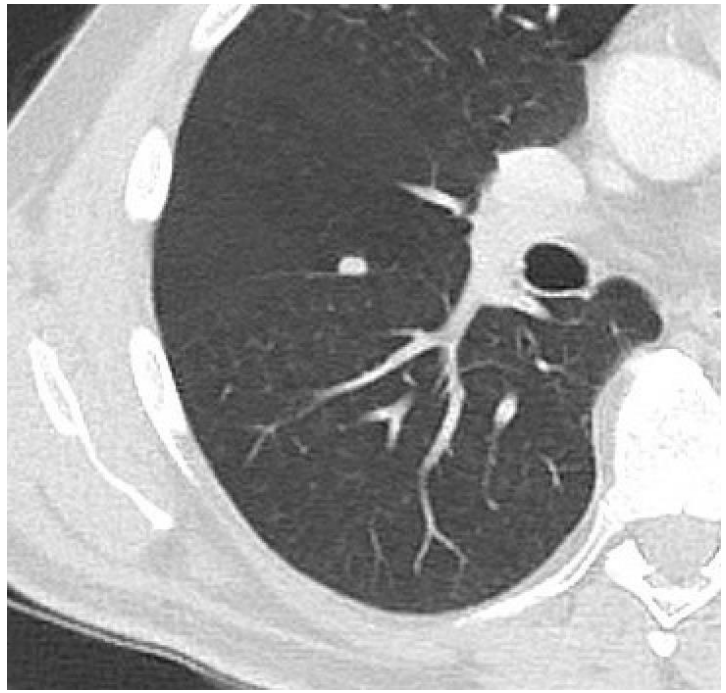
Clinical Case

- 51y old male
- April 2022 with constipation and 30 pounds weight loss
- June 2022 – partial bowel obstruction. CEA 27.5 - Surgery
- T3N0 adenoca ascending colon, pT3N0.
  MSS, KRAS G12S

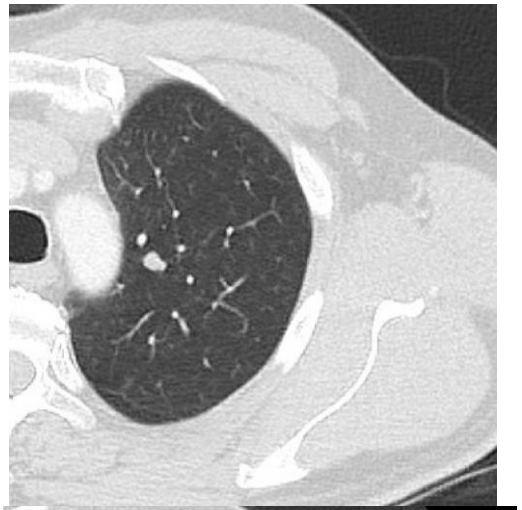
- Liver and Lung Metastases
- Folfox : 8 cycles
- Liver resection in Jan 2023
- Thoracic Surgery Consult Feb 2023

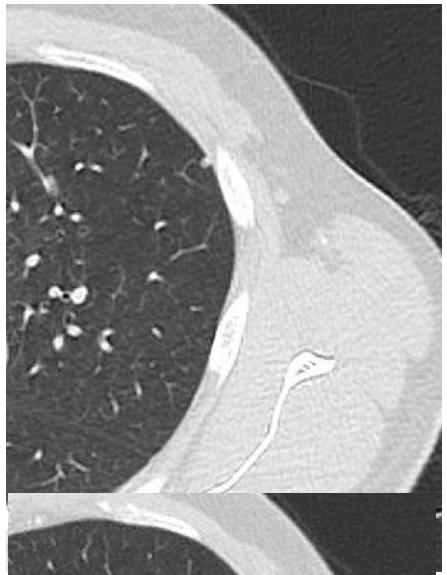
UHN Toronto General Hospital

CT chest right lung (3 lesions)



CT chest Left Lung (6 lesions)





Options

- A) Palliative chemotherapy
- B) IO
- C) Surgery
- D) SBRT
- E) Combination of Surgery and SBRT
- F) RFA
- G) Clinical Trials

March 2023 – Bilateral Thoracotomies and Wedge Resections and IVLP Left Lung

- Pathology:

3 Lesions in right lung (all adenoca)

7 Lesions in left lung (all adenoca)

Clear Margins

September 2023 – recurrence in right lung (non-IVLP treated).

CT April 2024 – Free of recurrence

Few considerations

Local failure after stereotactic body radiation therapy or wedge resection for colorectal pulmonary metastases

David B. Nelson, MD, MSc,[a] Nabihah Tayob, PhD,[b] Quynh-Nhu Nguyen, MD,[c] Jeremy Erasmus, MD,[d] Kyle G. Mitchell, MD,[a] Wayne L. Hofstetter, MD,[a] Boris Sepesi, MD,[a] Mara B. Antonoff, MD,[a] and Reza J. Mehran, MD[a]

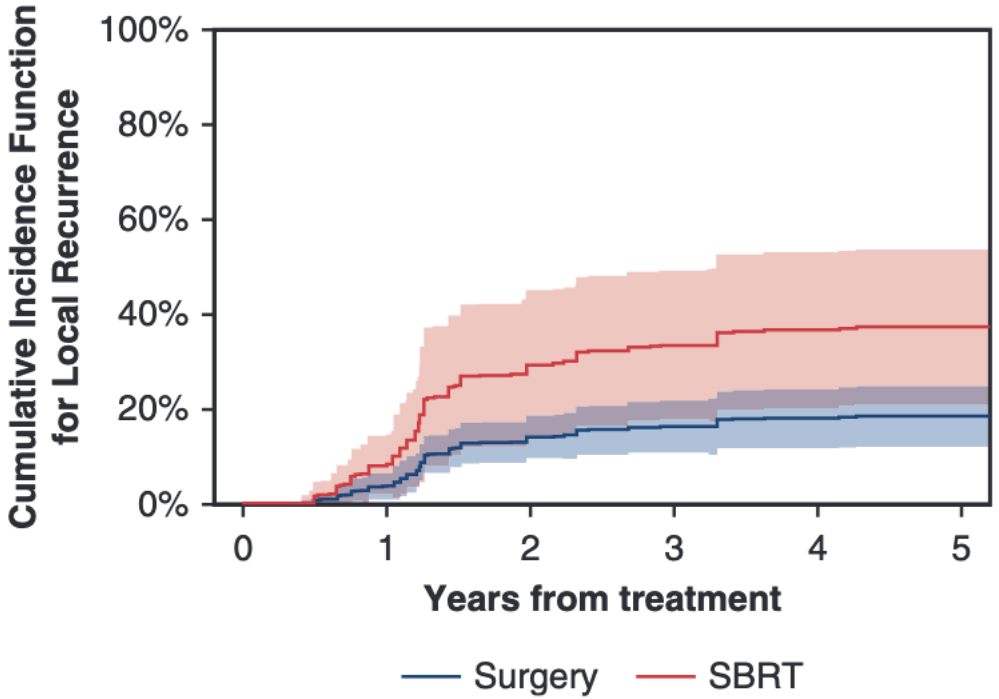
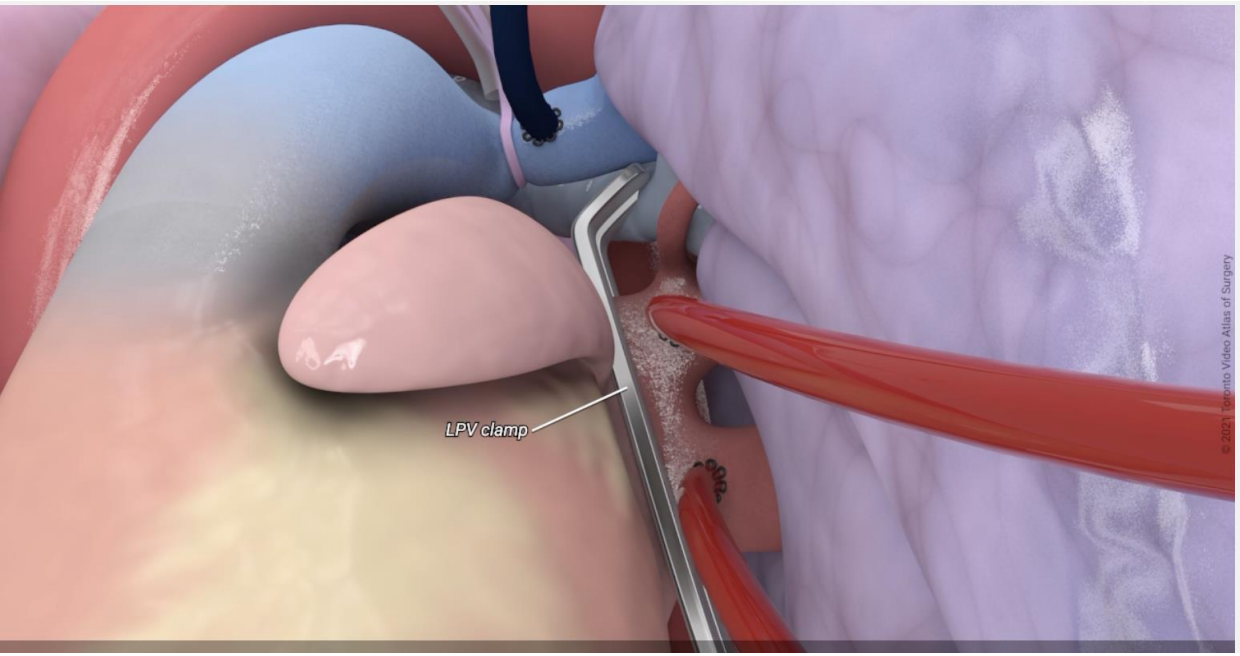
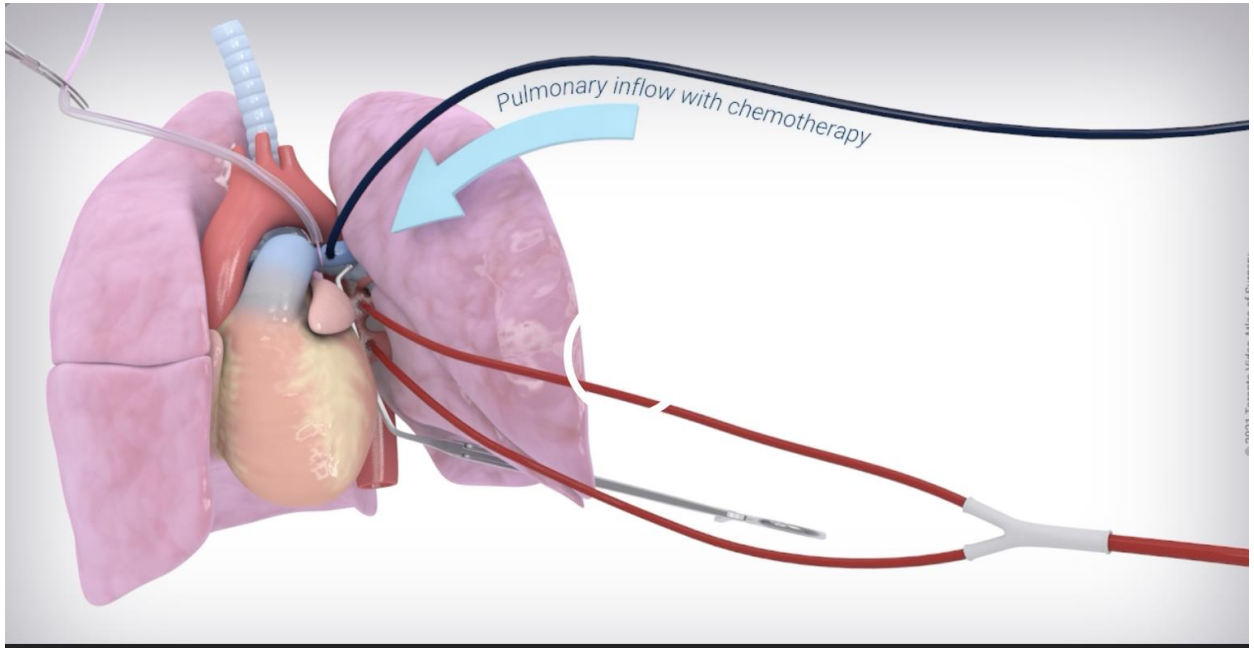


FIGURE 2. Cumulative incidence function indicating risk of local recurrence is higher with SBRT compared with wedge resection. Results modeled with death as a competing risk using matching weights. *SBRT,* Stereotactic body radiation therapy.

JCTVS 2019

In Vivo Lung Perfusion (IVLP)





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Clinical Trial Protocol

- **Sample Size**
- N= up to 22 patients
-
- **Study Population**
- Colorectal carcinoma, >3 and bilateral lung metastases with absence of extrapulmonary disease (except liver mets)
-
- **Dose Escalation Design**

- **Primary Objectives**
- To determine the safety of IVLP at selected dose levels
- To determine the maximal tolerated dose using a titration design

13 patients completed so far – No observed toxicity

Baseline Characteristics

Characteristic	N (%) or Mean (SD)
Age	45 (9)
Gender: • Male • Female	 8 (67%) 4 (33%)
# of lung metastases	9 (5)
Side of IVLP • Right • Left	 5 (42%) 7 (58%)

Groups Performed to Date:
Group 1: 5mcg/ml perfusate (n=1)
Group 2: 10mcg/ml perfusate (n=3)
Group 3: 15mcg/ml perfusate (n=3)
Group 4: 20mcg/ml perfusate (n=3)
Group 5: 25mcg/ml perfusate (n=2)

Results To Date

Characteristic	N (%) or Mean (SD)
Length of Stay	7.3 (2.2)
Pulmonary Edema at 72h based on CXR • Grade 0 • Grade 1 • Grade 2	 7 (58%) 3 (25%) 2 (17%)
Blood transfusions (# of units) • 0 • 1 • 2	 6 (50%) 3 (25%) 3 (25%)
Pulmonary Recurrences • Treated Lung • Untreated Lung	 3 (25%) 6 (50%)
Distant Recurrence	4 (33%)

Thank you