

# The role of PCI (Peritoneal cancer index) score in Ovarian Malignancy imaging

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## Background :

**Ovarian cancer** is the 6<sup>th</sup> most common cancer in women in the UK, with 80% presenting with peritoneal metastatic disease<sup>1</sup>. A **Multidisciplinary team (MDT)** discussion is essential to determine whether **primary oncological treatment** or **surgery** is the most appropriate initial management. Peritoneal cancer index (**PCI**) is a quantitative scoring system which can be included in radiological reports **to aid MDT discussions**<sup>2</sup>.

Recent European guidelines suggest a PCI score may be useful in MDT discussions, although currently it is not considered essential<sup>2</sup>.

In our center it is common practice to record the **PCI at diagnosis** and then again at stage of consideration for **cytoreductive surgery (CRS) post chemotherapy**.

## Aims :

- To review the number of patients with ovarian cancer discussed at our tertiary MDT, who had a PCI documented at presentation.
- To review the MDT outcomes for patients with peritoneal disease.

## PCI Score :

To derive a PCI score, the abdomen and pelvis is divided into 13 regions. Each region is score from 0-3 according to the size of disease in that region. The scores from each region are added together to give a total PCI (maximum score is 39.)

## Methodology :

We conducted a retrospective study of **adult patients** with ovarian cancer, discussed in our tertiary centre MDT meetings between January- April 2024.

Information was gathered from MDT documentation and the clinical radiology information system (CRIS). For those patients with peritoneal disease, we recorded the PCI at diagnosis (initial presentation) and reviewed the **MDT outcome** to assess how many patients had **primary surgery or primary chemotherapy**. We then calculated an average PCI score for each MDT outcome group (e.g. primary surgery and primary chemotherapy).

For a small cohort of patients the **PCI was recalculated** at time of consideration for **cytoreductive surgery**, this PCI was again documented.

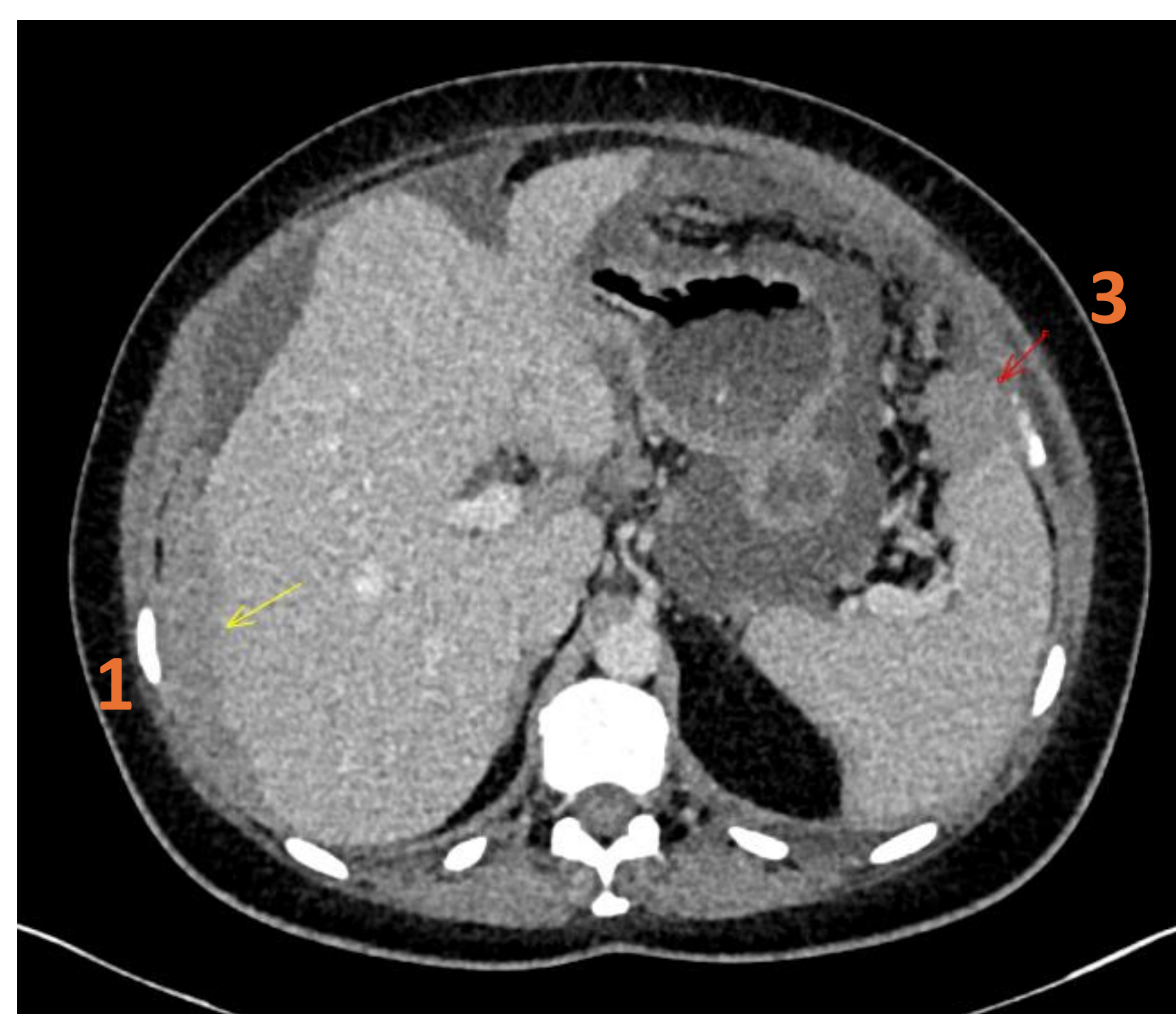
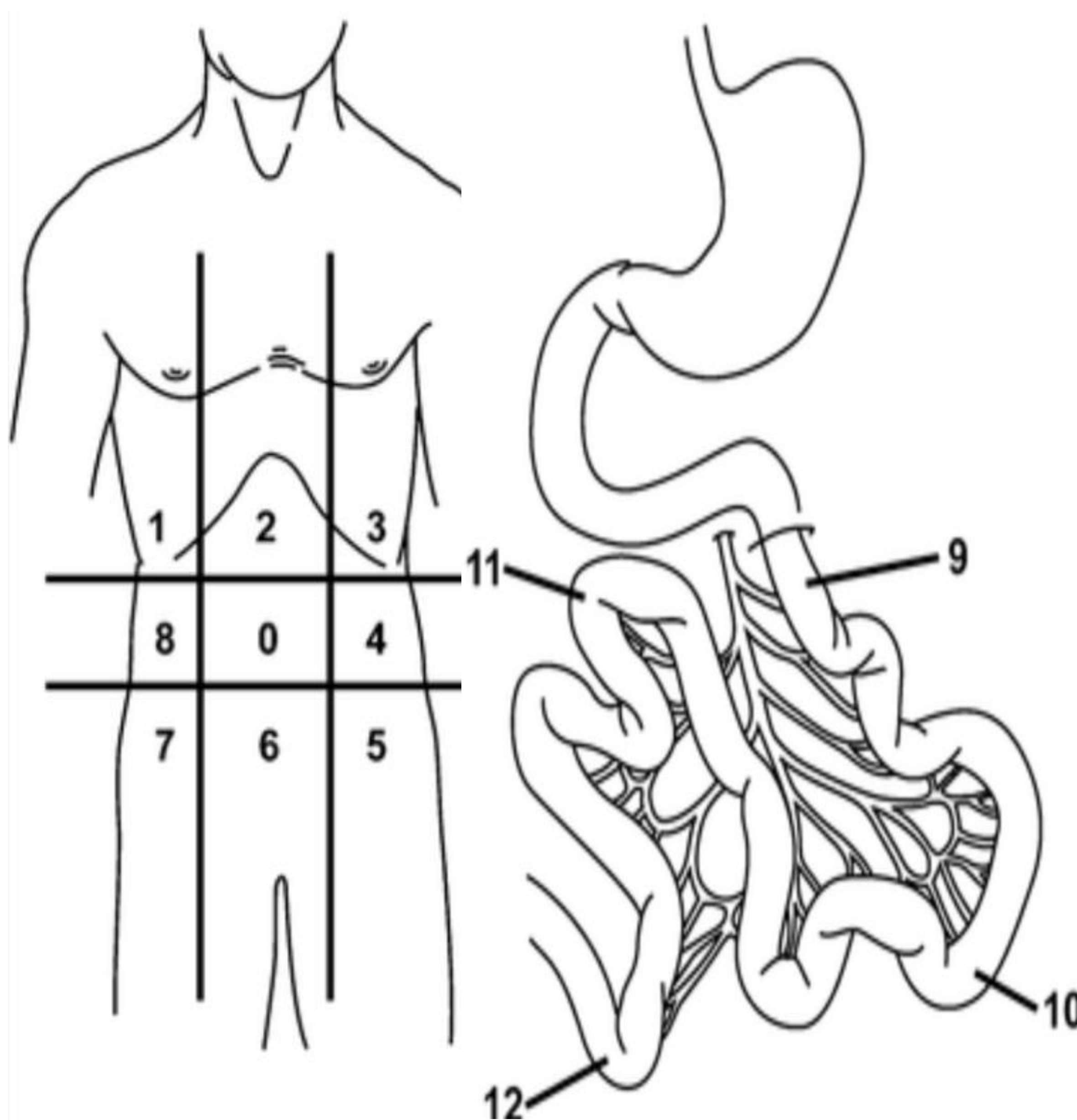


Figure 1: Region 1 Lesion size score 3, Region 3 Lesion size score 3



**Region :**  
0- Central  
1- Right Upper  
2 - Epigastrium  
3 - Left Upper  
4 - Left Flank  
5 - Left Lower  
6 - Pelvis  
7 - Right Lower  
8 - Right Flank  
9 - Upper Jejunum  
10 - Lower Jejunum  
11 - Upper Ileum  
12 - Lower Ileum

**Lesion Size Score :**  
LS 0 - No tumour seen  
LS 1 - Tumour up to 0.5cm  
LS 2 - Tumour up to 5.0 cm  
LS 3- Tumour >5.0 cm of confluence

Figure 5: PCI scoring system <sup>4</sup>



Figure 3: Region 10 Lesion size score 2



Figure 2: Region 0 Lesion size score 3, Region 8 Lesion size score 2



Figure 4: Region 6 Lesion size score 3

## Results :

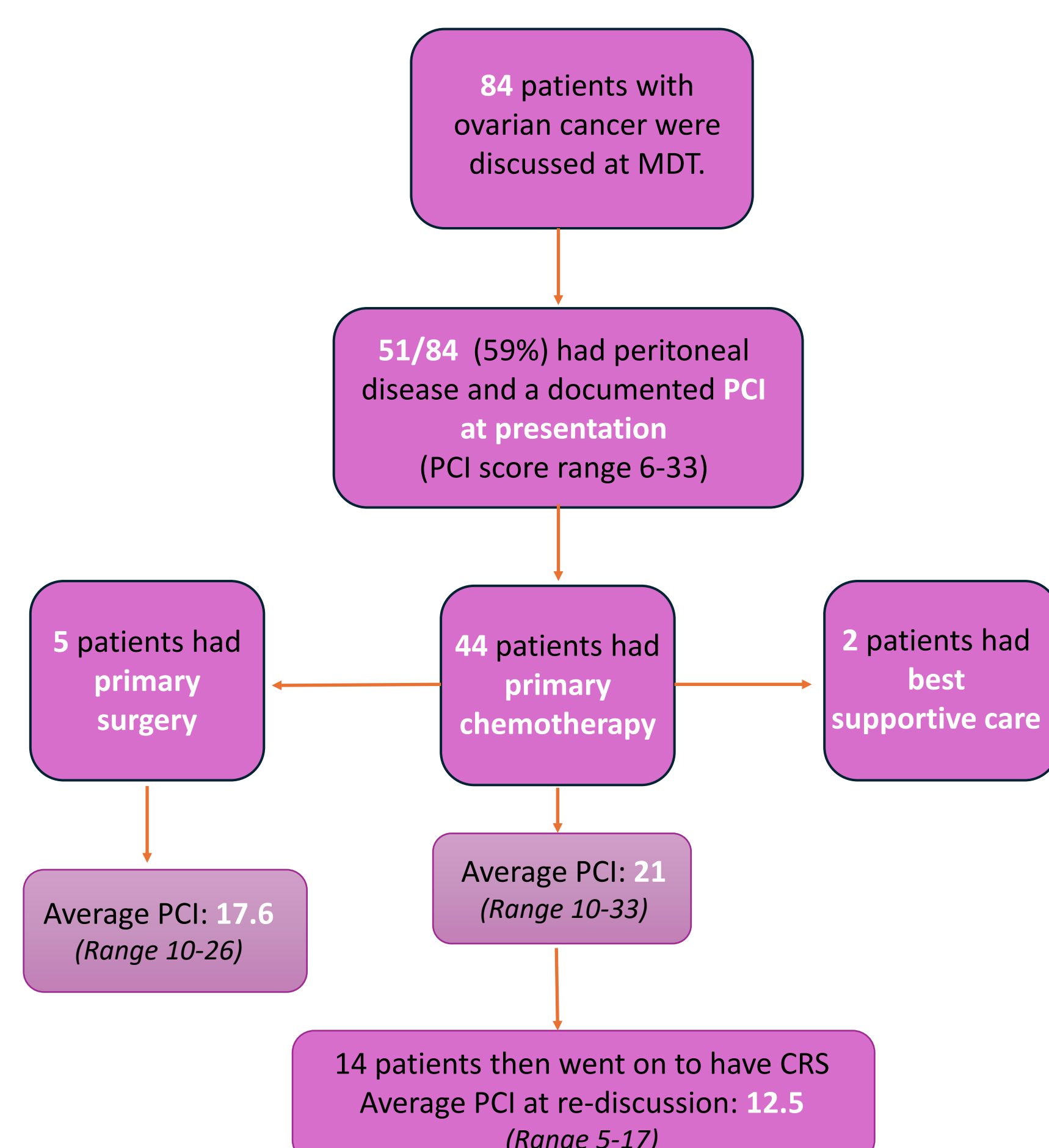


Figure 6: Region 12 Lesion size score 2

## Discussion :

PCI scoring is a useful tool to **quantify peritoneal disease**. We regularly use the PCI score(s) in our tertiary centre MDT discussion to aid in clinical decision-making regarding **suitability for surgical management** and to assess **treatment response**. We found that patients with a **higher PCI at presentation** were more likely to be offered **primary chemotherapy**. Patients whose PCI had **decreased** after chemotherapy were more likely to then be offered **CRS**.

It is the joint recommendation from a cohort of European imaging bodies that MDT discussions should include a measure of **extent of peritoneal metastases** using a **quantitative scoring method**<sup>3</sup>. Our data suggests use of PCI may be a useful tool to aid MDT discussions at other centres.

Overall, **integration** of PCI into MDT discussion has become integral in our tertiary center and is valued both by surgical colleagues and the wider MDT. PCI is not a definitive tool, as surgical management depends not only on the **volume** of disease, but also the **site** and **distribution**.