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**"Global Multidisciplinary team meetings": challenging cases virtual forums from the International Multidisciplinary Anal Cancer Conference (IMACC)**

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**Introduction**

Anal cancer is an uncommon malignancy, accounting for < 0.5% of global cancer diagnoses in 2018. However, incidence is increasing, particularly in females(Deshmukh et al., 2020; Organization, 2018). The mortality rate from anal cancer has increased by 3.1% per year, with higher rates over 50 years of age, highlighting elderly females as a particular risk group(Deshmukh et al., 2020). Histology is predominantly squamous cell carcinomas (SCC; 80-85%), with both premalignant and malignant lesions almost always consequent to infection with human papillomavirus (HPV) carcinogenic subtypes (Lin, Franceschi, & Clifford, 2018). Risk factors include coinfection with Human Immunodeficiency Virus (HIV) and chronic immunocompromised state, such as transplant recipients (Colón-López et al., 2018).

The majority of patients present with local or locally advanced disease, amenable to curative therapy with concurrent chemoradiation (CRT). Surgery is generally reserved for the approximately 15% with persistent or recurrent local disease(Gouvas et al., 2021). Metastatic disease, either de novo or relapse some time following localized presentation, meets the criteria for a rare malignancy (Lum, Prenen, Body, Lam, & Segelov, 2020).

As with most rare cancers, the management of rare tumors such as metastatic anal cancer may vary considerably across global regions, due to practice patterns and the availability of expertise and novel therapies, including clinical trials. It is recognized that global collaboration is needed to develop and assess new therapies and improve outcomes.

The consortium of multidisciplinary experts in metastatic anal cancer, established by the International Rare Cancers Initiative (IRCI; https://www.cancer.gov/about-nci/organization/cgh/research/irci), resulted in the undertaking of an international academic randomised clinical trial that changed standard of care for first line therapy in metastatic disease (Rao et al., 2020). From this group, the need for a dedicated scientific meeting on anal cancer was identified. The Inaugural International Metastatic Anal Cancer Conference (IMACC) was converted to a webinar in November 2020, due to the COVID-19 pandemic, with the official inaugural meeting (face to face and webinar) having taken place in Denmark in November 2021 (https://events.au.dk/imacc2021/conference).

During the 2020 conference, a "global Multidisciplinary team meeting (MDT)" was conducted with case presentations, voting for treatment choices and discussions regarding each option. Following excellent feedback, a further "Global virtual MDT" to discuss 'difficult cases" was held in May 2021. This paper describes the cases, presented in a format mimicking the virtual presentation, allowing the reader to follow and participate in the decision-making processes.

**Methods**

Two global MDT sessions were held via Zoom® to discuss cases presented by an expert. Polling questions were embedded throughout, with results displayed in real time using the zoom polling function. Cases were based on real patients, highlighting controversial areas where there is limited evidence for clinical guidance. An Expert Panel (this article's authors) discussed the polling questions and commented on relevant literature. Audience contributed comments and questions via the chat function.

**Results**

Attendances comprised 357 participants for the first session in November 2020; the second webinar in May 2020 was attended by 216 participants from 36 countries. Representation by craft group is presented in Table 1.

In the first session, more than 70 votes were received for each question; for the second session, at least 39 votes were received per poll.

The cases below are written so that the reader can participate and compare responses with those from the global MDT.

**1st Global MDT**

CASE 1: (presented by Dr Marianne Grønlie Guren, Clinical Oncologist, Norway)

- 57 year old woman

- Presented with local symptoms (pain and intermittent bleeding)
- Clinical examination: tumor at the anal verge, extending up in the anal canal, palpable enlarged lymph node right groin
- Biopsy: squamous cell carcinoma, p16 positive
- MRI: Tumor 6 cm long, anal canal and lower rectum, involving anal sphincter complex, but not vagina
- Involved mesorectal, external iliac, and right inguinal lymph nodes
- PET/CT: High FDG uptake in tumor, lymph nodes and 2 para-aortic nodes (L4 level)
- Staging: T3 N1c M1/ Stage IV

The first audience polling question was: Treatment intent?

1. Curative treatment intent
2. Potentially curative, >50% chance of cure
3. Potentially curative, <50% chance of cure
4. Palliative treatment intent

The audience by a large majority considered treatment intent as potentially curative (Figure 1a). Discussion centered on staging, noting that although loco-regional anal cancer is commonly perceived and treated as curable, the para-aortic nodes upstage this to metastatic disease, making prognostication difficult. In focussing on the lesion being 'treatable', there was comment that clinicians should discuss overall prognosis with all patients.

The audience were then asked to nominate: What treatment would you offer?

1. Chemotherapy only
2. Chemotherapy, then definitive chemoradiotherapy (CRT) to standard radiotherapy (RT) field
3. Chemotherapy, then definitive CRT to extended RT field (incl. para-aortic nodes)
4. Definitive CRT to standard RT field, then chemotherapy
5. Definitive CRT to standard RT field, then surgery para-aortic nodes
6. Definitive CRT to extended RT field
7. Definitive CRT to extended RT field, then chemotherapy
8. Other

The responses (Figure 1b) show that all participants considered treatment targeting both the primary tumor and the para-aortic nodes; none voted for systemic treatment only. The majority (39%) voted for definitive CRT to extended RT field including the para-aortic nodes; an additional 12% would then give chemotherapy. Thirty percent voted for chemotherapy first then definitive CRT to an extended RT field. Combinations of definitive CRT to standard RT field and chemotherapy and/or surgery was chosen by 17%.

The case continued with information that the patient received treatment with upfront chemotherapy (carboplatin/paclitaxel) then concurrent chemoradiotherapy with mitomycin/capecitabine. Radiation was delivered using volumetric modulated arc therapy (VMAT) to 58 Gray (Gy) to primary tumor, 54

Gy to involved lymph nodes and 40 Gy as elective CTV. The paraaortic lymph nodes were planned to receive >50 (-54) Gy if possible, depending on organs at risk dose.

The discussion included questions regarding the impact of the level of lymph node involvement and whether if there were lymph nodes higher up, these could be treated with extended fields. The toxicity in the pelvis and para-aortic region was debated. The extend of the RT fields following response to chemotherapy was discussed i.e. whether the initial tumor volume or the visible residual volume should be encompassed. The audience offered that stereotactic body radiotherapy could be an option an option for the para-aortic nodes.

The audience were then asked to consider if they would give any adjuvant therapy following this treatment plan. Of 97 responses, only 22% voted yes.

Dr Pierfrancesco Franco, Radiation Oncologist from Italy discussed the case, highlighting:

- There is no standard of care for this subset of patients
- Even if M1 stage, the clinical setting (involvement of the single extra-pelvic lymph node that drives the upstaging) is potentially curable, with 3-year overall survival (OS) published at 67% and 3-year disease free survival (DFS) at 42%(Hodges et al., 2009; Holliday et al., 2018). Most recurrences presented as distant metastases. The clinical situation of whether this constitutes oligometastatic disease or extended loco-regional disease was debated.
- The clinical setting anyway is high-risk, so it is reasonable to try to intensify treatment.
- Upfront CRT is feasible (L4 lumbar-aortic nodes can be easily included within RT treatment volume) but may not be sufficient in this setting.
- The sequence of combination therapy for this setting is hard to decide: induction chemotherapy/neoadjuvant chemotherapy has shown negative results in seminal trials, namely RTOG 98-11(Gunderson et al., 2012) and ACCORD 03(Peiffert et al., 2012); maintenance and adjuvant chemotherapy is also non-effective, as per the ACT II study(James et al., 2013).
- If we consider the setting as metastatic (as per staging, since M1), then first line chemotherapy with carboplatin and paclitaxel is reasonable as a) you treat both macro and micro metastatic disease, b) selection of patients (responders versus non-responders), c) tumor shrinkage to facilitate subsequent definitive treatment, so that in case of excellent response you could follow with definitive CRT.
- If commencing CRT after neoadjuvant chemotherapy, a reasonable approach is to follow dose and volumes as per locally advanced disease within the pelvis. It is required to extend treatment volumes to LA nodes; the cranial level is unknown (upper level at the upper lymph node involved?

1 vertebra above? 2 vertebrae above?); the ideal dose level to elective volumes for LA nodes is also unknown.

- Considering similar situations encountered with other pelvic cancers:
    - In the use of extended field RT for cervical cancer, it is noted that the right paracaval region above L3 is at lower risk and therefore is spared (Wang, Zhou, Wang, Hu, & Zhang, 2020).
    - the para-aortic strip volumes for seminoma use a volume of 25 mm lateral and 2 cm anterior to aorta is used to cover 90% of microscopic disease (Fossa et al., 1999).

Dr Guren (Clinical Oncologist, Norway) presented a summary of papers addressing the role of extended-field CRT for definitive treatment of anal cancer involving para-aortic lymph nodes, noting a paucity of literature in this field {Holliday, 2018 #2174}{Hodges, 2009 #2173}. This data led to conclusions that extended-field CRT is a potentially curative treatment option for selected patients (depending on fitness and feasibility), however the short follow-up period is noted.

CASE 2: (presented by Dr Eva Segelov, Medical Oncologist, Australia)

- 56 y man; MSM*
- HIV+ for 24 years, intermittently compliant with HAART; normal CD4 count on medication
- Presented with local symptoms, found to have an anal SCC; p16 status not recorded
- Staged T3N1M1 ($8^{th}$ edition) with two small central liver metastases on FDG-PET scan

**Abbreviations: MSM- men who have sex with men; HAART- highly active antiretroviral therapy*

The audience was asked: Which approach would you take?

1. Neoadjuvant "standard chemotherapy" then definitive CRT then liver resection
2. Definitive CRT then further chemotherapy then liver resection
3. Definitive CRT then liver resection, no adjuvant chemotherapy
4. Definitive CRT then liver resection then adjuvant chemotherapy
5. Chemotherapy alone (no RT)
6. IO upfront
7. Other

Voting results are presented in Figure 2a). Approximately half the respondents said they would commence with standard chemotherapy in a neoadjuvant approach, followed by standard definitive CRT then liver resection. The majority of the remainder (42%) preferred up-front definitive CRT, then either further chemotherapy or straight to liver resection. This shows that multi-modality curative approaches are considered for patients with limited and resectable metastatic disease, albeit with optimal sequencing yet to be elucidated.

Regarding choice of chemotherapy agent during CRT, the question “Do you use capecitabine rather than infusional 5-Fluorouracil?” (Figure 2b) showed that the majority of audience use capecitabine routinely. Around 30% use capecitabine “only for a specific reason e.g. travel”; the remaining 9% voted “never”. This represents a shift towards less infusional therapy, based on evidence for capecitabine substitution albeit with non-randomised studies(Glynne-Jones et al., 2008; Jones et al., 2018; Meulendijks et al., 2014).

The case scenario continued:

- Patient had definitive CRT with Mitomycin C and infusional 5FU
- Complete response documented in liver on PET/CT at 3 months; minor residual uptake in anus

The audience was asked at this stage “Would you resect the original liver lesions?” Of the 85 responses, the majority (72%) answered ‘no’. The role of resection of areas of complete response after chemotherapy [and more recently, immunotherapy (IO)] continues to be debated and tailored to individual cases and reflects biases within institutions. The practice is borrowed from colorectal metastatectomy, which offers a curative paradigm.

The patient’s subsequent course was described:

- Observed with repeat PET at 6 months showing complete metabolic response
- At 12 months, patient had 1 small liver lesion

The audience were questioned regarding next treatment decision: How would you manage him?

1. Resect liver lesion upfront with no adjuvant chemotherapy
2. Resect liver lesion upfront with adjuvant chemotherapy
3. Systemic chemotherapy then resection
4. Systemic chemotherapy + IO then resection
5. We have a trial
6. Other

Responses (Figure 2c) show that resection upfront was preferred, but there was near equipoise between post-operative adjuvant therapy and no further systemic therapy. This is an area with very limited literature in anal cancer. Treatment decisions will depend as much on patient-related factors (post-operative recovery, tolerability of previous treatment, patient wishes) as tumor-related and biology factors (time since last treatment; amount of neoadjuvant therapy).

The patient’s subsequent progress was outlined:

- Liver lesion resected: metastatic SCC
- No adjuvant chemotherapy
- At 24 months: local symptoms; biopsy positive for recurrent disease in pelvis at edge but within RT field
- No systemic disease present on PET/CT

The audience was asked: What is your management?

1. Systemic treatment only (chemotherapy and/or immunotherapy)
2. Systemic treatment and further RT (technique)
3. Systemic treatment and further RT only if inoperable
4. Systemic treatment then surgery (exenteration)
5. Surgery (exenteration) upfront then no adjuvant
6. Surgery then adjuvant systemic treatment
7. Other

Polling results (Figure 2d) reveal that half the audience would refer for upfront radical surgery, with only a small number offering further radiation. In discussing the latter, the practicalities of re-treatment after definitive radiation was discussed, including use of newer techniques such as proton beam therapy. There is little literature on this topic, however there is a report of hyperfractionated accelerated re-irradiation of anal cancer(Osborne et al., 2018).

The expert panel was then asked to discuss the role of immunotherapy in refractory local disease. No trial data and minimal anecdotal data exists, but the following themes emerged:

- response to immunotherapy are expected due to squamous histology
- trials are studying use earlier in the disease course, as well as in refractory settings
- global studies are needed to gather sufficient data and precedent has been set for academic trial collaborations through IRCI metastatic anal cancer group

In the final part of the clinical case, the patient “develops uncontrolled local disease with widespread metastases”. The audience was asked to consider the particular palliative needs of this scenario. Comments from the expert panel highlighted difficulties with pain control with pelvic recurrence and local fungation of uncontrolled disease. The need for skilled palliative care with multidisciplinary input, including excellence in nursing care to assist with ‘wound’ care was highlighted, along with the key role of psychosocial support to patient and family and carers.

To end the session, the audience were asked to concentrate on the psychosocial impact of a diagnosis of anal cancer throughout the course of the disease and how it may differ with gender and context (such as HIV co-infection). The paucity of research in this area was noted, along with the epidemiological data of increasing prevalence in females{Kang, 2018 #2176} {Islami, 2017 #2175}(Lum et al., 2020). The emerging impact of male HPV vaccination programs was discussed. It was noted that there was a lack of awareness in the general community that anal and other genital cancers were predominantly HPV-related and expected to be reduced in the future by mass vaccination of children of both genders.

**Second global MDT**

This occurred on 6 May 2021, with the first case being presented by Dr Pierfrancesco Franco, Radiation Oncologist from Italy, on the theme of salvage therapies in locally recurrent anal cancer.

CASE 1:

- 53-year-old female
- Past history: cervical cone biopsy aged 25 showing CIN3
- 4 months: perineal discomfort, mild anal pain, rectal tenesmus, sporadic rectal bleeding and frequent mucorrhea
- Digital rectal exam: 3-4cm palapble anal mass with circumferential and likely sphincter involvement. No hemorrhoids, warts or fissure. Vaginal exam normal. Palpable (2-3cm) left inguinal lymph node
- Anoscopy and biopsy: SCC of anal canal, Grade 3, p16 +ve by immunohistochemistry (IHC), basaloid subtype
- Staging (Figure 3): MRI: primary anal carcinoma which extends to infiltrate the posterior part of the anal canal and the external anal sphincter (maximum cc diameter 48 mm) above the puborectal sling and a 16 mm left inguinal node. CT chest, abdomen, pelvis: no metastases. FDG-PET: pathological uptake within the anal canal (SUV max 12.8) and left inguinal region (SUV max 13.2)

Dr Franco presented staging as Stage IIB (cT2N2M0) under TNM 7th edition (2010) but noted this would be reclassified to Stage IIIA (cT2N1aM0) in the 8$^{th}$ edition (2017).

The first audience poll was: What would be your choice for concurrent CRT?

1. 5-FU x 2* + MMC x 1
2. 5-FU x 2 + MMC x 2
3. Capecitabine x 2 + MMC x 1
4. Capecitabine x 2 + MMC x 2
5. 5-FU + cisplatin x 2
6. Capecitabine + cisplatin x 2

* Numbers refer to total cycles of chemotherapy

The second poll asked: What would be the RT dose to the primary tumor?

1. Around 50 Gy
2. Around 54 Gy
3. Around 60 Gy
4. Other

Audience responses are presented in Figure 4. Most would use the standard regimen of infusional 5FU with Mitomycin C, with two doses of the latter (no one opted for a single dose). However, if using capecitabine (approximately one quarter of respondents), there was a marked preference for a single Mitomycin C dose. Interestingly, around 10% of clinicians nominated a 5FU/cisplatin combination, despite trials in this showing a poorer outcome than 5FU/Mitomycin C.

With regards to radiation dose, there was a clear preference for the 'around 54Gy' and 'around 60Gy', but again there is a range which reflects the paucity of data in this area. It was noted that the PLATO (PersonaLising Anal cancer radioTherapy dOse; https://medicinehealth.leeds.ac.ukinfo/430/solid_tumors/2210/plato) ACT V trial is comparing 53.2 Gy versus 58.8 Gy versus 61.2 Gy in 28 fractions, whereas the RTOG 0529 study schedule used 54 Gy in 30 fractions(Kachnic et al., 2013).

The patient received 54 Gy (1.8 Gy per fraction over 6 weeks; Figure 5) for areas of macroscopic disease with elective volumes of 45 Gy in 30 fractions (1.5Gy per fraction over 6 weeks), based on a simultaneous integrated boost (SIB) approach and using VMAT with a dual-arc approach, with image guided radiation therapy (IGRT) with daily cone-beam computerised tomography (CBCT). The concurrent chemotherapy given was 2 cycles of standard infusional 5FU and MMC.

The issue of post treatment assessment was discussed, by presenting results at 26 weeks following commencement of therapy:

- Anoscopy: residual scar within the anal canal. Biopsy: no tumor
- Clinical examination: still palpable lymph node left inguinal region
- Pelvic MR: CR within anal canal; persistence of lymph node within left inguinal groin (15 mm)
- PET scan (6 months after the end of CRT): pathological uptake left inguinal region (SUVmax: 4.9; Figure 6).
- Fine needle aspiration: epidermoid tumor cells

At this stage, the audience was asked: What would be the therapeutic strategy you would offer the patient?

1. Watch and wait
2. Left inguinal lymphadenectomy
3. Bilateral inguinal lymphadenectomy
4. Miles ressection + bilateral inguinal lymphadenectomy
5. Re-irradiation (SBRT to inguinal lymph node)
6. Systemic therapy

The audience response is shown in Figure 5c). Most respondents voted for left inguinal lymphadenectomy. Dr Franco described that the patient actually underwent bilateral inguinal and obturator lymphadenectomy and biopsy of the anal canal. The decision around the bilateral lymphadenectomy was debated. Histopathology revealed SCC in the left inguinal and obturator nodes with extracapsular extension in the latter. Right inguinal and obturator nodes were negative and anal biopsies showed fibrosis only. The audience was then challenged with the question: "Would you offer any consolidation chemotherapy?", to which 87% responded yes. The patient was described to have undergone no adjuvant therapy at this stage.

Follow-up imaging 12 months later (Figure 7) by MRI revealed a hypointense mass size 75mm slightly distal to the previous region, with skin infiltration and involvement of the left adductor longus muscle, with FDG-PET showing uptake in the soft tissues. The audience was asked: "What would be the therapeutic strategy you would offer- the patient is operable, with surgeon judging disease as resectable?"

1. left femoral resection/lymphadenectomy +/- adjuvant therapies
2. preoperative re-irradiation (+/- chemotherapy) then resection
3. preoperative chemotherapy then resection
4. systemic therapy

Responses are shown in Figure 5d. Dr Franco described that the therapeutic strategy chosen was continuation of aggressive local therapy with the aim of eradicating all disease, still aiming for cure. The patient underwent resection of the recurrence in the left femoral region, including excision of previous surgical scar, resection of the fascia and partial resection of the adductor longus muscle, with a muscle flap reconstruction using the sartorius muscle. Histopathology revealed SCC grade 2, with infiltration of the subcutaneous tissue. The deep and lateral resection margins were positive. Postoperative CT imaging revealed no detectable disease.

The audience were polled on the question: Would you offer post operative re-irradiation given the R1 resection? Voting showed 63% yes, 37% no.

The patient was administered further radiation to that area with photon-based treatment but no concurrent chemotherapy. The delivered dose was 50.4Gy, using 1.8Gy/day (Figure 8).

Pleasingly, the patient remains free of disease, 24 months after the last salvage therapies. Sequelae include grade 3 vaginal stenosis and Grade 2-3 fibrosis of left inguinofemoral region, with grade 2 hyperchromia and skin atrophy. There are no vascular, neurological nor gastrointestinal or genitourinary late effects.

As had been emphasized throughout the case, aggressive local therapy can result in long term cure even after recurrent local relapses. Toxicity trade-offs of re-treatment need to be considered against likelihood of cure. Published data in this field is very scarce.

<u>CASE 2:</u>

The second case was presented by Dr Eva Segelov (Medical Oncologist, Australia) on the theme of metastatic anal SCC. Patient details were:

- 77 year female, retired nurse, lives alone
- Past history: CIN III
- Presenting symptom: anal pain

- Primary: T4N1 (TNM version 8)
- Staging: FDG-PET avidity in small lung lesion and high paraaortic LN

The audience was polled: Which approach would you take?

1. Neoadjuvant “standard chemotherapy” then definitive CRT
2. Definitive CRT then further chemotherapy
3. Definitive CRT, SBRT to high LN and surgical resection lung (i.e. all sites of disease)
4. Chemo + palliative RT for symptoms
5. IO upfront with/without other treatments
6. Other

Results are presented in Figure 9a). Expert commentary was sought on the role of aggressive treatment for patients with “minimal metastatic disease”, under the topics of aggressive radiotherapy even in the context of metastatic disease; the role of immunotherapy in first line treatment of metastatic anal cancer; and the utility of FDG-PET in staging. The patient was reported as having received neoadjuvant chemotherapy then definitive CRT, with good response until further local relapse/progression in the form of a pelvic mass at the edge of the previous RT field, 11 months later, with no systemic disease. The audience was polled with the question: Which approach would you take?

1. Use systemic agents to try to control
2. Standard RT
3. Refer for proton therapy even if not available locally

Voting results are shown in Figure 9b), stimulating expert commentary covering the emerging role of proton beam radiation and the difficult question of “How well do systemic agents control local relapse?”

The patient was then presented as having widespread lung metastases and several liver lesions 12 months later, with local disease and symptoms remaining well controlled. Various approaches were discussed: retreatment with same agents as the original chemotherapy; use of a second line chemotherapy regimen; administration of IO (specifically, immune checkpoint inhibitors) as monotherapy or in combination with chemotherapy. Subsequent discussion focused on the role of IO in second line treatment and beyond. There was also an update on “New targeted agents – any hope on the horizon?”

The final scenario in the case considered the issues arising at the stage of the patient suffering progressive disease systemically and regionally, with local pain and fungation as major symptoms. Discussion focussed on challenges in the palliation of advanced local disease and the psychosocial aspects of an anal cancer diagnosis at any stage.

**Discussion**

These interactive anal cancer global MDT sessions are an original approach to education and consensus building for patient care in this rare tumor setting, where the evidence-base for treatment options is scarce. Discussion of controversies and variation in management between countries fosters interaction and engagement across the entire world.

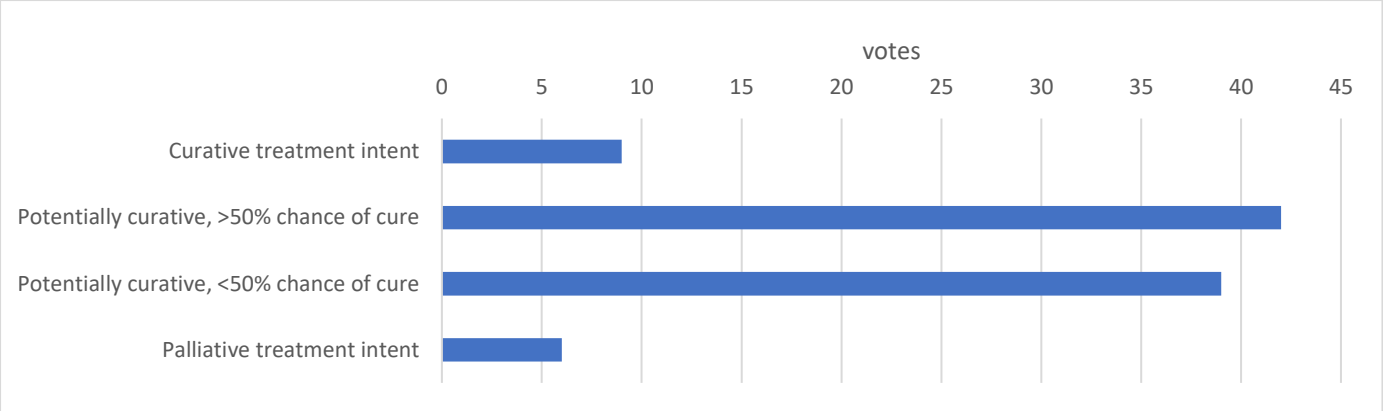
For very rare cancers such as metastatic anal cancer, education and peer review can be delivered on a global scale successfully using virtual platforms, with real time polling enhancing audience participation. During the pandemic, these sessions have allowed continuation of academic interchanges. The legacy is likely to continue beyond these circumstances, mitigating against the cost and time impact of conference attendance, reducing disparity in cancer care delivery by enhancing inclusiveness in disseminating expert opinion and debate.

**Table 1:** Composition of webinar attendees by discipline

| | Webinar 1 | Webinar 2 |
|---|---|---|
| Physician | 293 | 170 |
| PhD student | 11 | 7 |
| Trial manager | 10 | |
| (Research) nurse | 20 | 8 |
| Data manager | 4 | 6 |
| Research radiographer | 18 | 5 |
| Other | 11 | 20 |
| Total | 357 | 216 |

**Figure 1: Audience voting responses for MDT 1, Case 1**

a) Treatment intent?




b) Which treatment plan would you recommend?

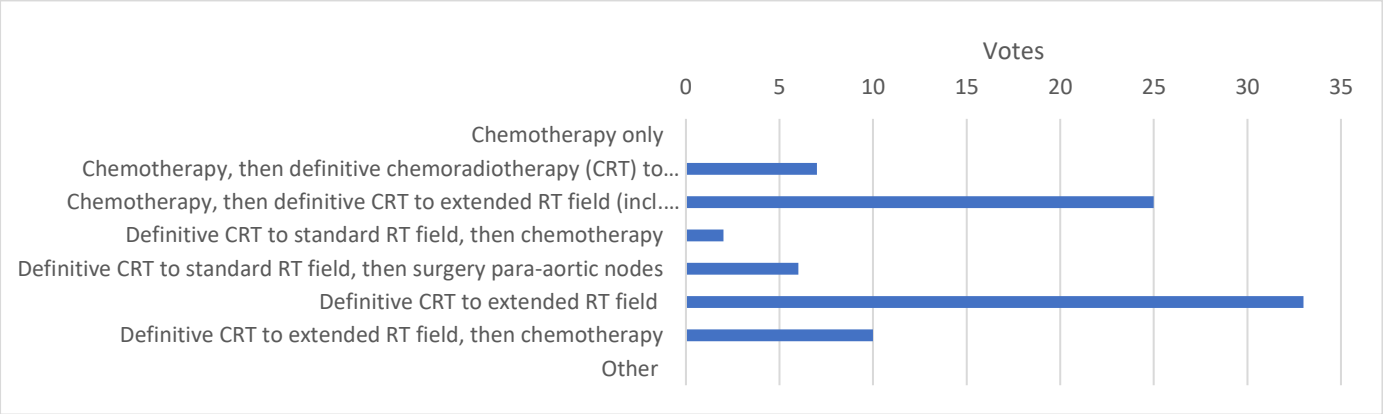
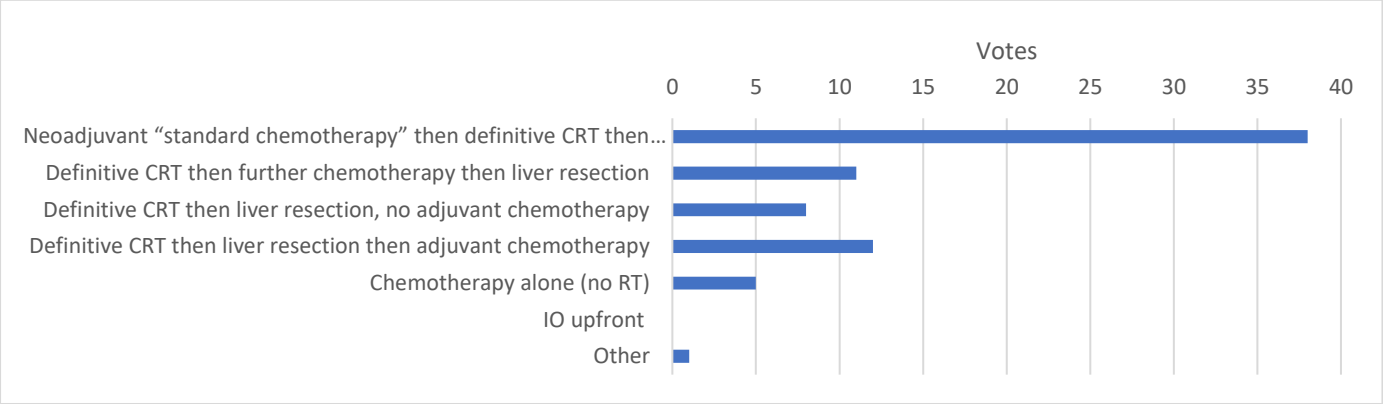
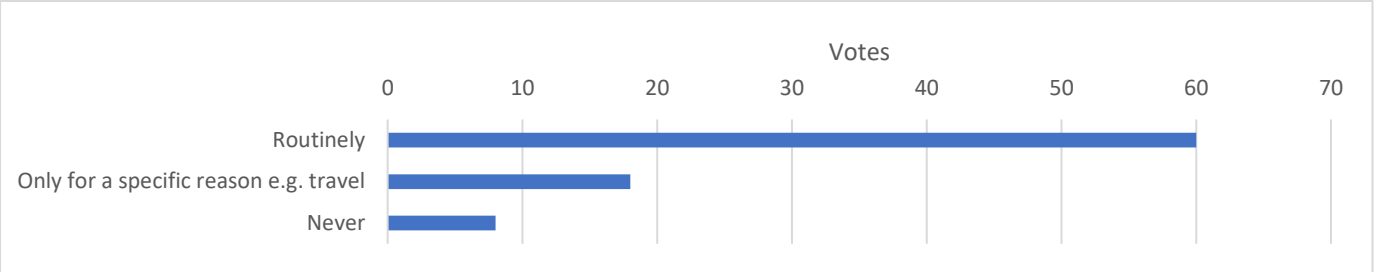


**Figure 2: Audience voting responses for MDT 1, Case 2**

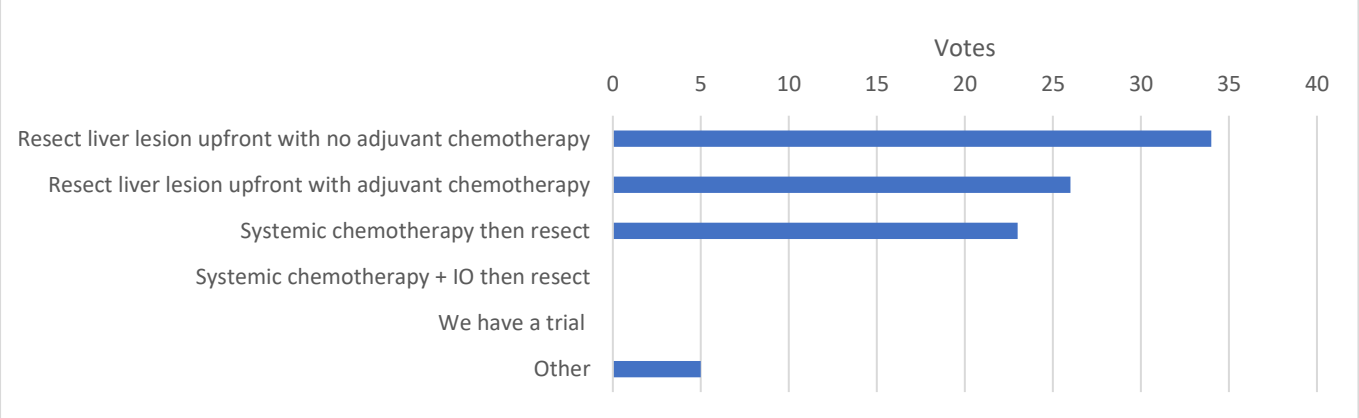
a) Which approach would you take?




b) Do you use capecitabine rather than infusional 5FU?




c) How would you manage him?




d) What is your management?

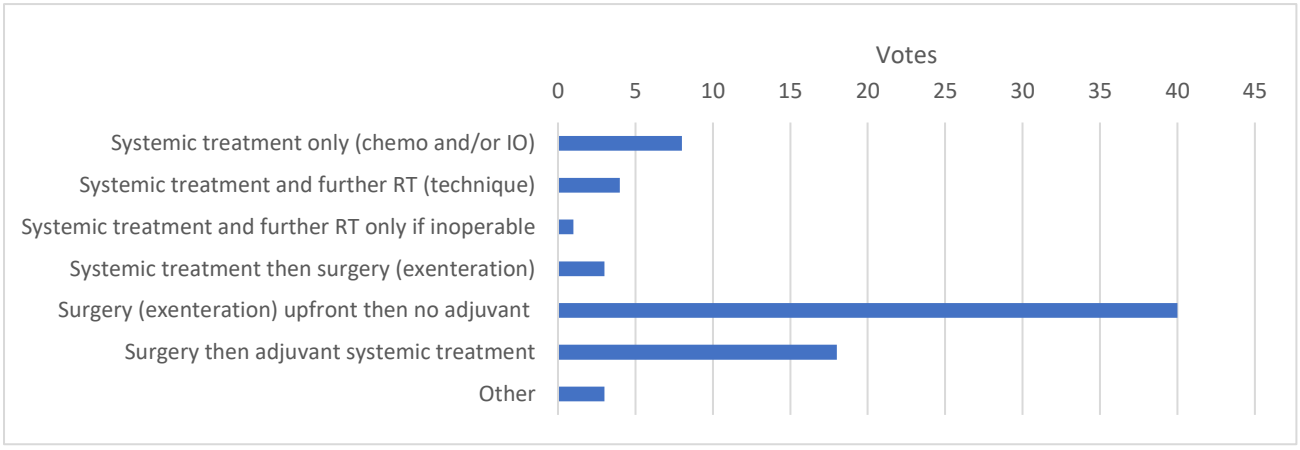
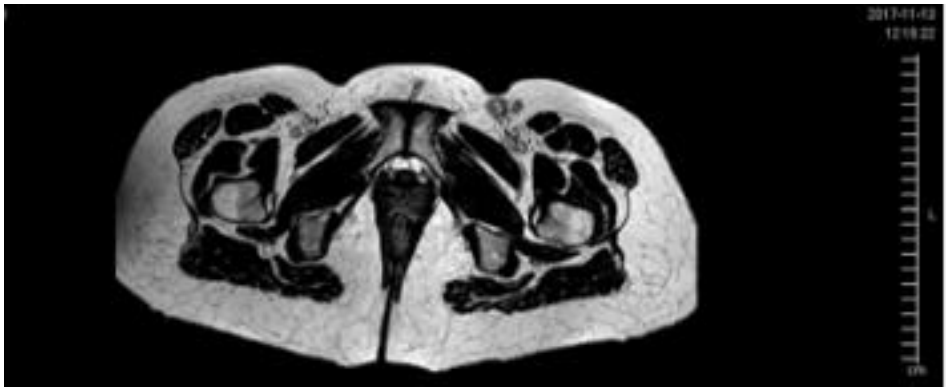
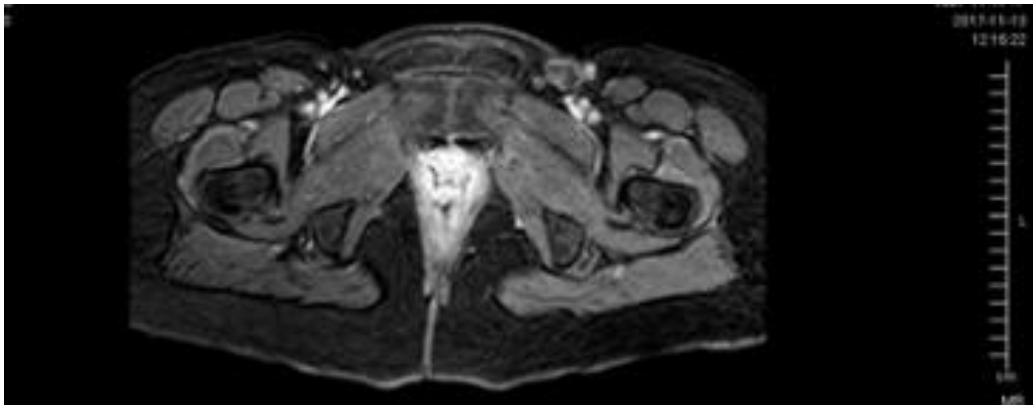

Votes
0
5
10
15
20
25
30
35
40
45
Systemic treatment only (chemo and/or IO)
Systemic treatment and further RT (technique)
Systemic treatment and further RT only if inoperable
Systemic treatment then surgery (exenteration)
Surgery (exenteration) upfront then no adjuvant
Surgery then adjuvant systemic treatment
Other

Figure 3: Staging imaging for MDT 2, case 1* a) T2-weighted Transaxial MRI b) Ultrafast gradient echo sequence (thrive) MRI images illustrating a primary anal carcinoma which extends to infiltrate the posterior part of the anal canal and the external anal sphincter (maximum cc diameter 48 mm) above the puborectal sling and a 16 mm left inguinal node c) $^{18}$FDG-PET: pathological uptake within the anal canal (SUV max 12.8) and left inguinal groins (SUV max 13.2).

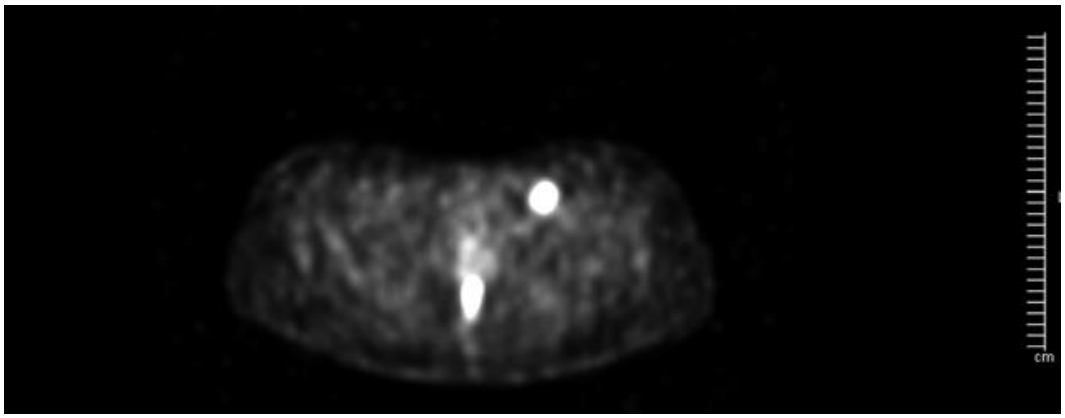
a)



b)



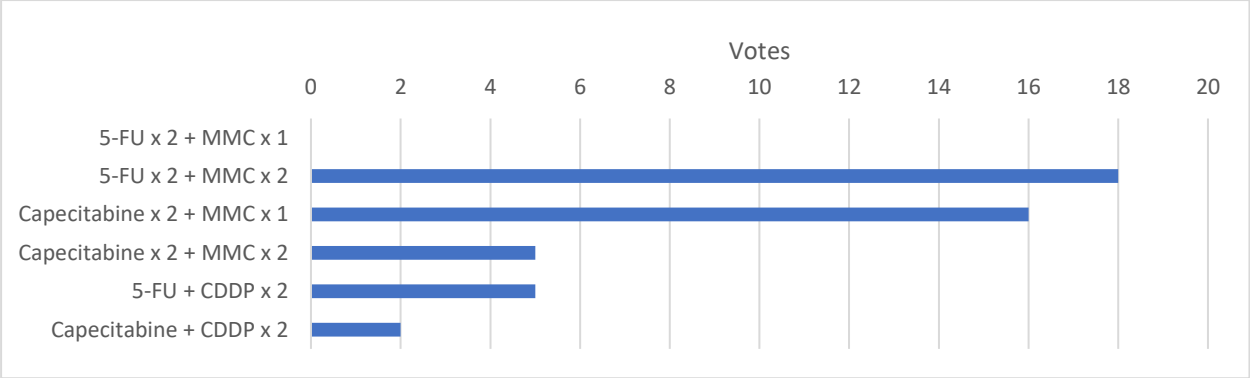
c)



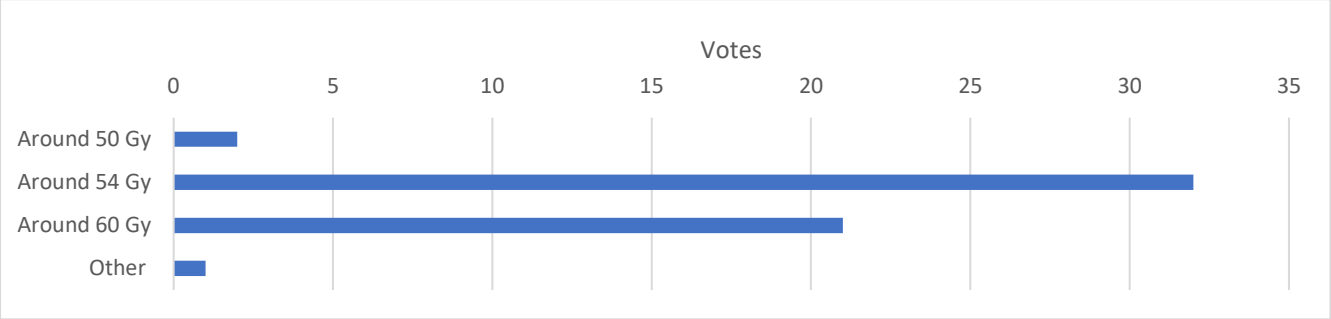

all scans from this patient used with consent

Figure 4: Audience voting responses for MDT 2, Case1

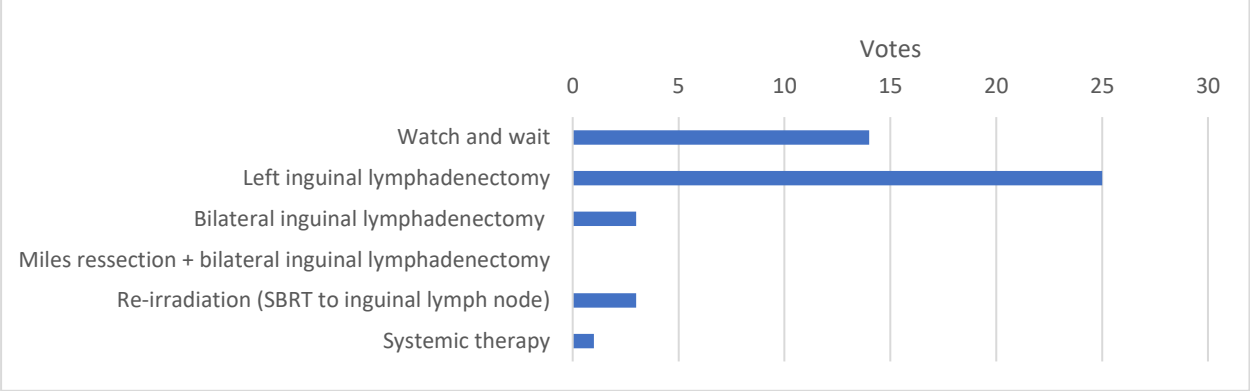
a) What would be your choice for concurrent RT-CT?




b) What would be the RT dose to the primary tumor?




c) What would be the therapeutic strategy you would offer the patient?




d) What would be the therapeutic strategy you would offer- the patient is operable, with surgeon judging disease as resectable?

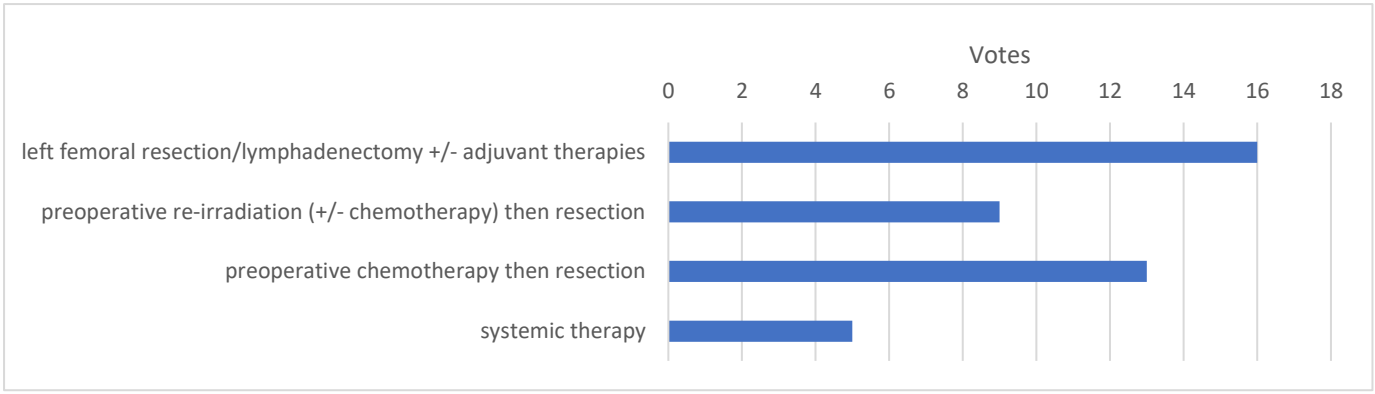
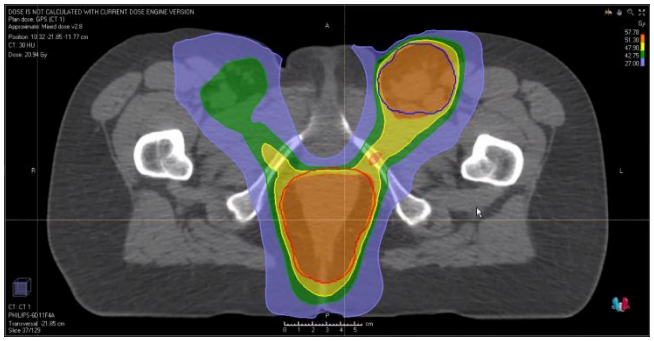

Votes
0
2
4
6
8
10
12
14
16
18
left femoral resection/lymphadenectomy +/- adjuvant therapies
preoperative re-irradiation (+/- chemotherapy) then resection
preoperative chemotherapy then resection
systemic therapy

Figure 5: Radiation planning for initial treatment, MDT2, case 1.



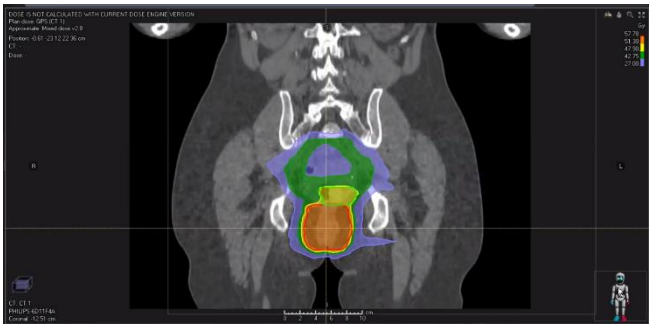


Figure 6: Representative PET scan 26 weeks post treatment (MDT 2, case 1). Pathological uptake is shown in left inguinal region (SUVmax: 4.9)

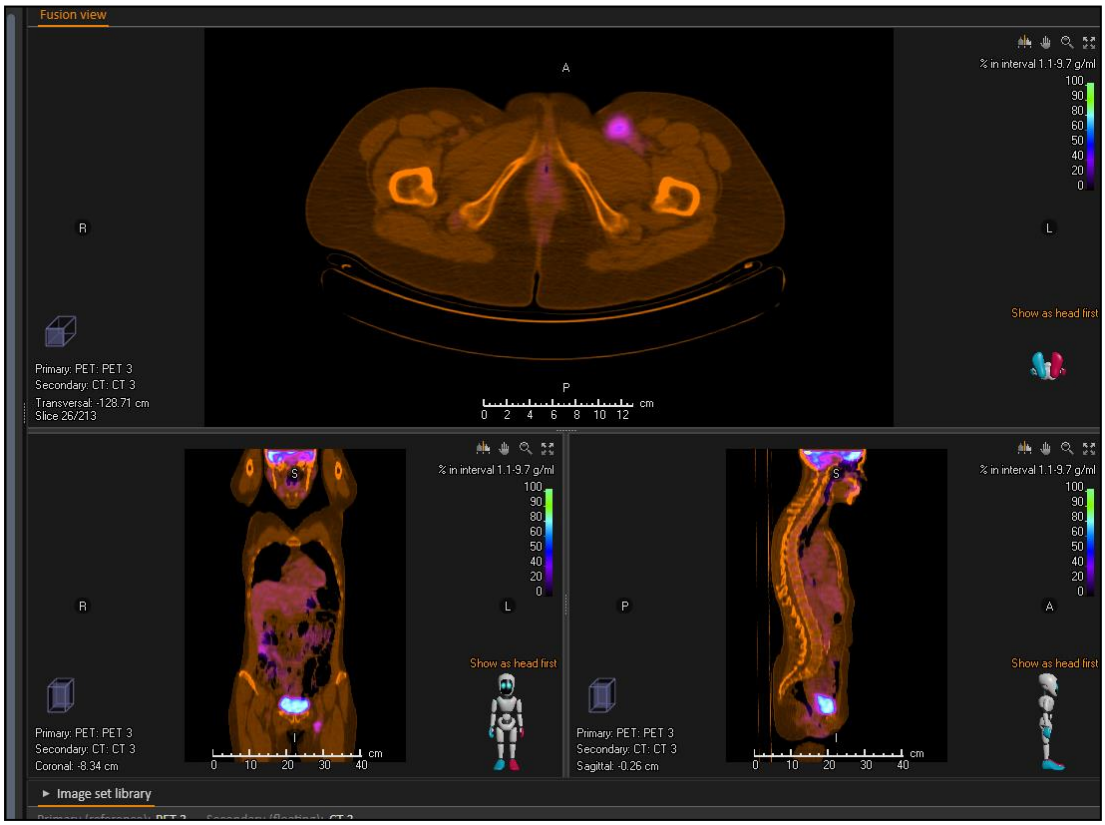
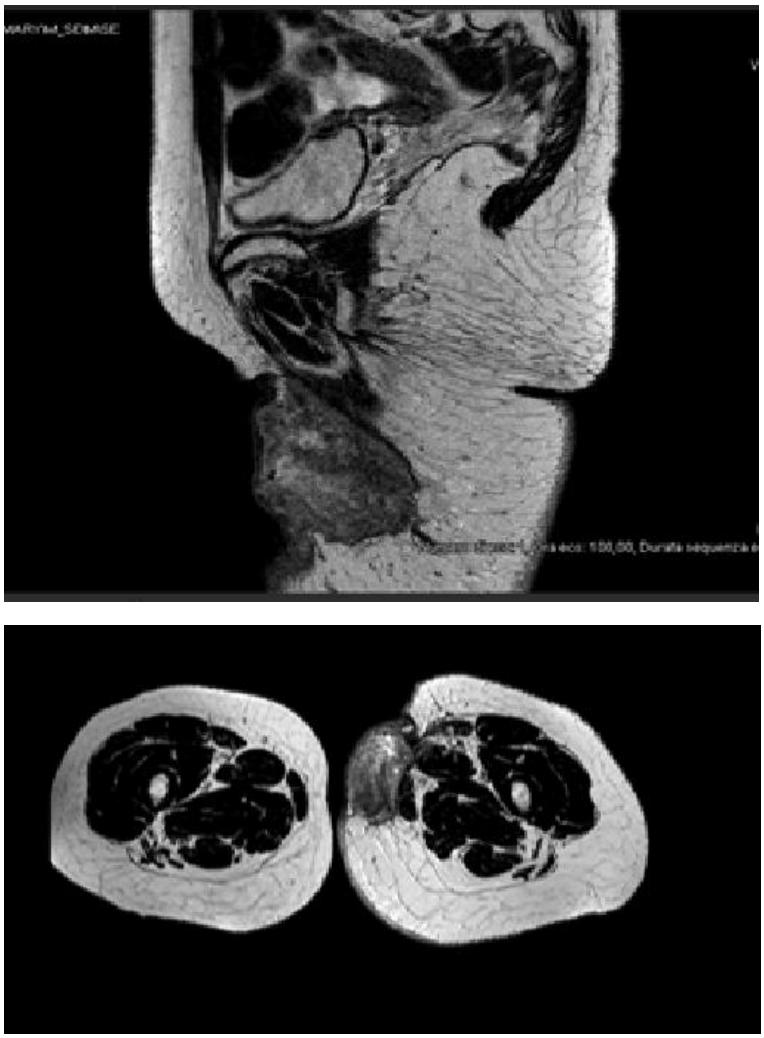


Figure 7: a) MRI showing hypointense mass 75 mm in the craniocaudal direction with skin infiltration and involvement of the left adductor lungus muscle b) PET showing left femoral uptake (SUVmax 10.7)

a)



b)

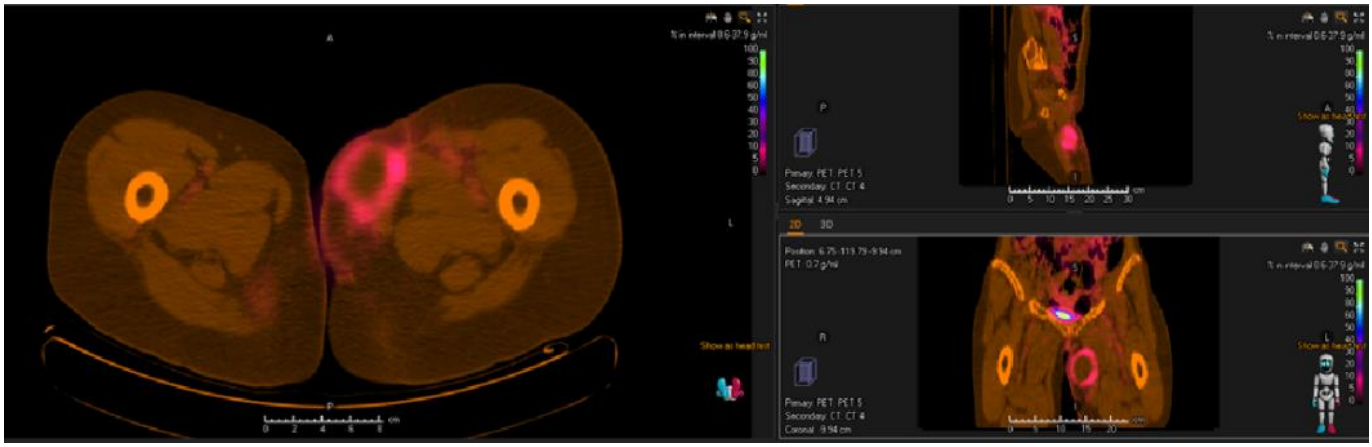
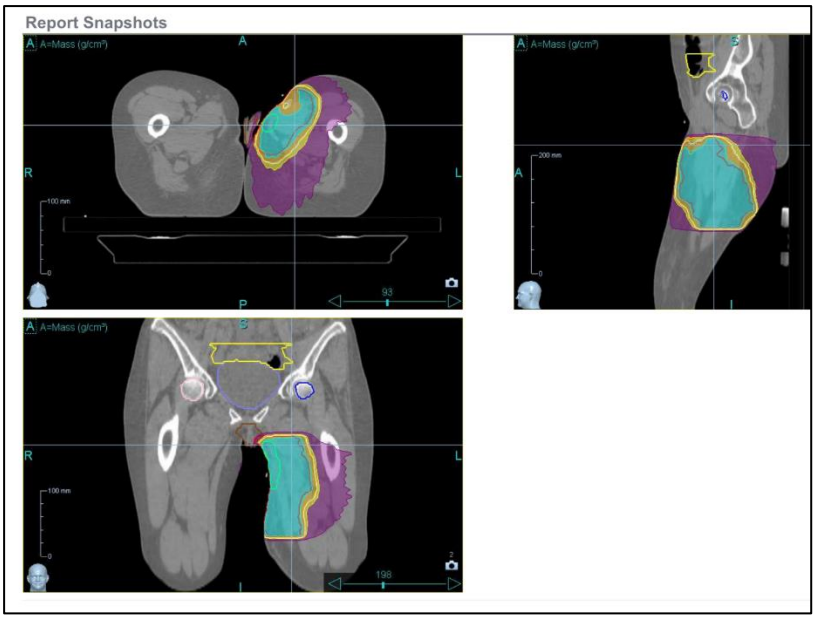
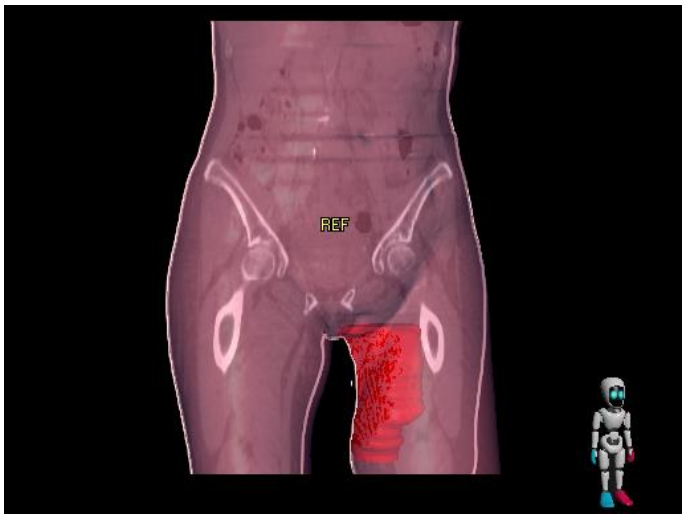


Figure 8: Radiation fields administered postoperatively after resection of thigh metastasis



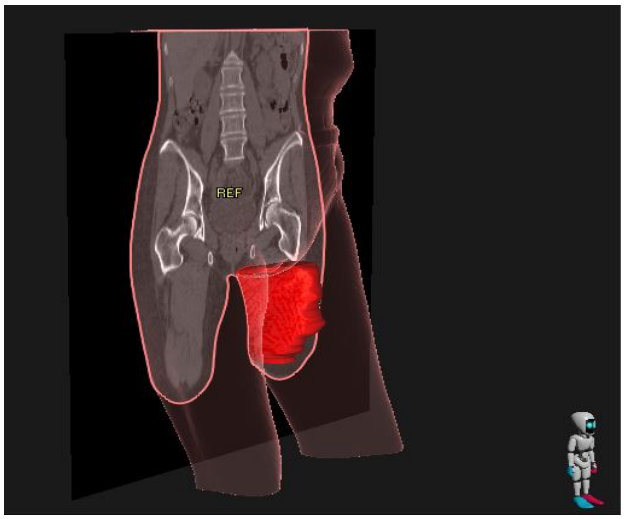
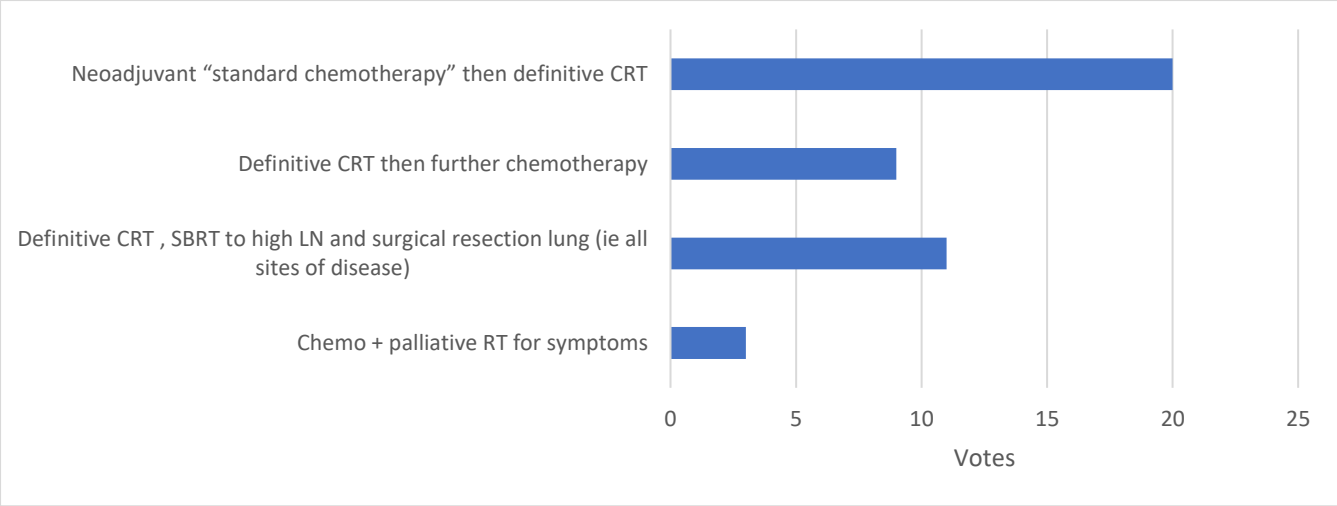
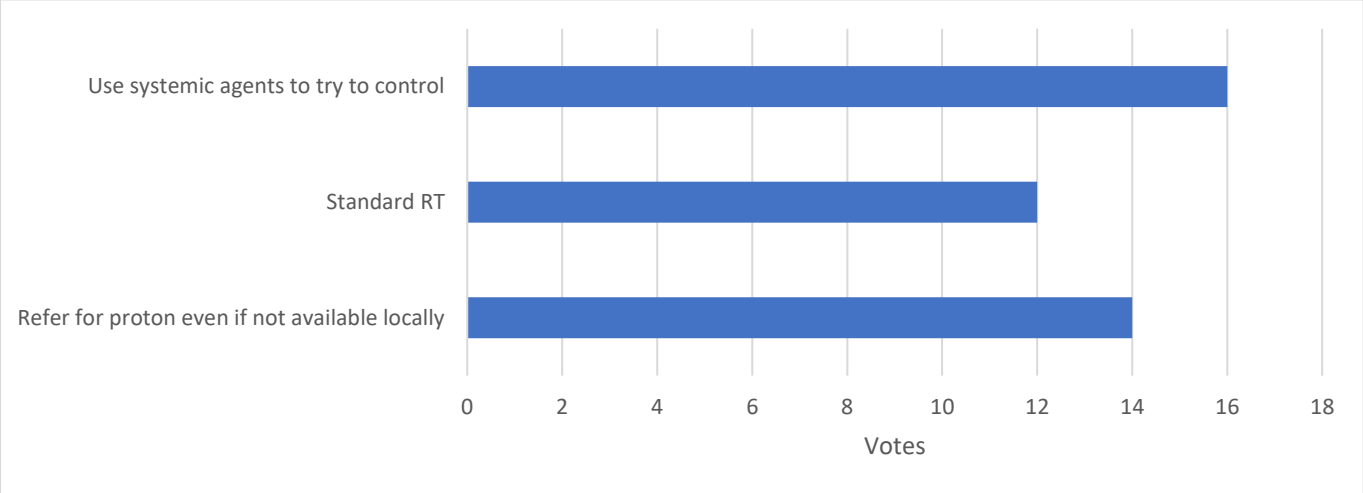



Figure 9 **Audience voting responses for MDT 2, Case 2**

a) Which approach would you take?




b) Which approach would you take?



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