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DUBLIN
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RADIATION ONCOLOGY
POSTER PRESENTATION ABSTRACTS

Impacting factors and Rate of Feeding tube insertion in Oropharyngeal Cancer

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Purpose

Controversies remain regarding tube feeding routes and optimal timing for initiation. The aim of this study was to assess patients in our institution who received definitive radiation for Oropharyngeal cancer who required tube feeding. We compared our findings to international standards and used the study to design a prediction tool for institutional tube feeding guidelines to optimise patient management.

Materials and Methods

We performed a retrospective study in St Luke's radiation oncology hospital from January 2017 to December 2019. Patients diagnosed with oropharynx cancer who received 70gy/35fr with or without chemotherapy were included. All patients were referred from St James's hospital and had the same staging workup. Patients were excluded if they had adjuvant or palliative treatment. The variables we focused on were chemotherapy, TNM staging, p16 status, social history, type and cause for tube insertion and swallow function.

Results

A total of 1193 patients were treated for head and neck cancer in St Luke's Hospital Rathgar from January 2017 to December 2019. After excluding all adjuvant cases, palliative cases, non-affiliated hospitals and cancer sites other than Oropharynx, the final number of patients was 73. Further analysis of these 73 patients was completed and we created a protocol to optimize timing of tube insertion for our institution and better patient care.

Conclusion

Out study highlighted many variables are involved regarding optimum timing and prediction of tube insertion in Oropharyngeal cancer patients getting radiation treatment.

Stereotactic Ablative Radiotherapy for Early Stage Lung Cancer and Lung Oligometastases: A Single Centre Experience in New Zealand

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Purpose

Stereotactic Ablative Radiotherapy (SABR) involves the delivery of high doses of precisely targeted radiation in a shorter time period than conventional radiotherapy. The aim of this study was to compare the outcomes of lung based SABR in a New Zealand cohort to the global literature.

Materials and Methods

A single-institution retrospective analysis was performed on all patients who received lung-based SABR between May 2015 and September 2019 at Waikato Hospital, New Zealand. The study included both early stage lung cancer and lung oligometastases. The default dosing schedule was 54Gy in 3 Fractions but 48Gy in 4 Fractions and 60Gy in 8 Fractions was utilised if the PTV included the chest wall or was close the central mediastinal structures respectively.

Results

102 patients received SABR to 116 lesions. Median follow-up was 19 months. The 3-year rate of local control was 85% and 82% in the primary and metastatic cohorts respectively. Central primary lung cancer was associated with a higher risk of local recurrence (HR6.4 p=0.02). The 3-year progression-free survival and overall survival rates in the early stage lung cancer cohort were 56% and 71% respectively. Maori patients with primary lung cancer had a significantly worse progression free survival (HR2.4 p=0.03). The oligometastatic cohort had a 3-year progression free survival rate and overall survival rate of 26% and 73% respectively. There were no reported grade 3 toxicities.

Conclusion

The use of lung based SABR in a typical radiotherapy setting in New Zealand mirrors global outcomes.

EWS in Prostate Clinic – Not the Early Warning Score!!

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Purpose

Ewing's sarcoma (ES) is a rare form of cancer that usually affects bones. It behaves aggressively with high rates of local and distant failure (1). Children and young adults are most likely affected. Extra-osseous Ewing's sarcoma (EWS) is rare, originating from soft tissue.

Materials and Methods

We present a case of EWS treated at our institution

Results

A 36-year-old male presented with rectal pain and an abnormal digital rectal exam (DRE).Magnetic Resonance Imaging (MRI) showed a 4.4cm mass involving the right apex of the prostate with extra-capsular extension. His Prostate Specific Antigen (PSA) was normal.Prostatic biopsy confirmed Ewing's sarcoma (EWS-FL1 transformation). He received sixcycles of Vincristine/Doxorubicin/Cyclophosphamide (VDC), alternating with Ifosfamide/Etoposide (IE). MRI showed a partial response. Concomitant chemo-radiotherapy followed, to a total dose of 54Gy, given in 1.8Gy fractions. He is planned for six further cycles of VDC alternating with IE.

Conclusion

To our knowledge, only ten cases of prostatic EWS have been reported in the literature.There is limited data regarding management and treatment. A multimodal approach is generally taken, including surgery, chemotherapy and radiotherapy. Overall survival remains poor. We wish to discuss our approach and outcome in this rare and challenging case.

A rare case of spinal paraganglioma treated with stereotactic radiotherapy

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Purpose

Paragangliomas (PGs) are relatively rare tumours, accounting for approximately 0.3% of all neoplasms. Central Nervous System PGs are uncommon with the vast majority presenting in the cauda equina region of the spinal cord. Spinal PGs are rare, non-secretory neuroendocrine tumours of the extra-adrenal paraganglionic system. They are often asymptomatic, with back pain being the presenting symptom. Their appearance on MRI cannot distinguish them from other tumours of the spinal canal.4 We present a case of recurrent spinal paraganglioma treated with stereotactic radiosurgery (SRS).

Materials and Methods

A 34-year-old man presented in 2005 with right-sided sciatic pain and numbness affecting his right foot. He denied history of trauma. MRI spine showed a mass at L4/L5. He underwent posterior decompression. Histology confirmed paranganglioma. He experienced increasing pain from 2010 to 2016. MRI spine in 2017 showed progression of his known paranganglioma on the right L5/S1 nerve root region consistent with his pain.

Results

He was discussed at Cyber Knife MDT and referred for SRS. He completed SRS 25Gy in 5 fractions in 2018. He achieved an excellent clinical and radiological response to treatment with a complete resolution of his neuropathic pain and numbness in right foot.

Conclusion

Paragangliomas occur either spontaneously or as part of hereditary syndromes including Multiple Endocrine Neoplasia 2A/2B, Von-Hippel-Lindau syndrome or Neurofibromatosis-1. Spinal paragangliomas are uncommon. Complete surgical resection is the preferred treatment.6 SRS plays an important role in treating recurrent disease. Long term follow-up with serial imaging is required due to the risk of disease progression.

Primary CNS Melanoma – A rare entity! A case report and review of literature

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Purpose

Primary melanocytic tumours of the Central Nervous System (CNS) are rare lesions arising from melanocytes of the leptomeninges.They represent 1% of all melanomas. Lesions can manifest as diffuse disseminations within the subarachnoid space or as solid masses, and they range in histologic grade from benign to malignant. We present a case of primary CNS melanoma treated with radiotherapy (RT) and immunotherapy (IT).

Materials and Methods

A 60-year-old lady presented with 18-month history of worsening headaches, nausea and gait disturbance. MRI brain with contrast showed a lesion in the medulla oblongata with additional foci of pathological enhancement throughout the posterior fossa. MRI spine showed extensive leptomeningeal disease throughout the spinal cord and cauda equina roots. A subsequent CT-TAP was normal. She underwent L1/2 laminectomy and biopsy of intra-dural and intra-neuronal lesions. Histopathology confirmed melanocytic neoplasm involving nerve and connective tissue.

Results

Following discussion at the Neuro-oncology MDT, she proceeded to have cranio-spinal RT 36Gy in 20 fractions with a spinal boost of 45Gy and 54Gy to nodules in brain in January 2018. She commenced immunotherapy April 2018. Re-staging scans have shown no disease progression. She has received 21 cycles of nivolumab to date.

Conclusion

Primary melanocytic disease of the CNS is a rare condition with no current consensus on treatment. Its diagnosis is established only after exclusion of secondary metastatic disease from cutaneous, mucosal or retinal primary. Primary CNS malignant melanomas show a more benign course with long-term tumour control. Long term follow-up includes regular re-staging scans with close oncology follow-up.

An Eye for An I(MRT): A Challenging Case of Optic Nerve Sheath Meningioma

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Purpose

Optic Nerve Sheath Meningiomas (ONSMs) are rare, benign tumours of the meninges surrounding the optic nerve. ONSMs make up about 2% of all orbital tumours. ONSMs are slowly-progressive and associated with low morbidity and no mortality. The location of ONSMs makes them challenging to treat. Radiotherapy has become the standard over the last 20 years due to reduced post treatment morbidity. Even with new modalities of radiotherapy, it is difficult to ensure safe doses to surrounding structures. This case demonstrates the difficulty in treating this very rare tumor due to its unique location.

Materials and Methods

A 76-year-old female, initially diagnosed in 2004 with Right ONSM, presented in 2012 with worsening visual loss. She was scheduled to have radiotherapy then, but developed Non-Hodgkin's Lymphoma, which was treated throughout 2012-2013. Her vision deteriorated rapidly between 2019 and early 2020. Her most recent MRI in February 2020 showed extension of the tumour into the globe and anterior clinoid process.

Results

She completed 54Gy/30# IMRT using ExacTrac to reduce margins in April 2020. Her PTV was 99% with acceptable Dmaxs for important surrounding structures. She had minimal side effects during treatment. She is for follow up MRI and ophthalmology review in July 2020.

Conclusion

This case highlights the complexities involved with treating ONSMs, especially those that are extending intracranially. She will need to be followed up after her IMRT for any adverse events, with the view that her tumour should reduce in size and her vision should remain stable or improve.

Pulmonary metastases from an Atypical Meningioma! A case report and review of literature

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Purpose

Whilst most meningiomas are benign and slow growing (WHO grade-1). Atypical (WHO grade-2) and anaplastic (WHO grade-3) meningiomas are more aggressive with a higher risk of recurrence and metastases. We present an unusual case of multiple pulmonary metastases from recurrent intracranial meningioma

Materials and Methods

A 52-year-old male presented in 2013 with headaches. MRI showed a parasagittal extra-axial frontal lobe mass. He underwent radical excision. Histology showed an atypical meningioma. He underwent adjuvant radiotherapy 60Gy/30#. Surveillance MRI 5 years later showed recurrence in the right frontal lobe. He underwent further resection. Histology confirmed recurrent atypical meningioma. He underwent re-irradiation 54Gy/30# March 2019 and had been on radiological surveillance since

Results

In July 2020, he was found collapsed following a seizure at home. MRI Brain was stable but chest Xray showed multiple cannonball lesions. CT TAP showed extensive bilateral pulmonary nodules consistent with metastases. Biopsy of lung lesion confirmed recurrent atypical meningioma. Following discussion at neuro-oncology MDT he has been referred for consideration of systemic therapy.

Conclusion

Extracranial metastases of meningiomas are rare and occur in 0.1% of cases. Our case highlights the importance of a differential diagnosis of metastatic meningioma in the setting of an atypical or anaplastic meningioma, a history of local tumour recurrences, tumours in close vicinity to the venous sinus and in tumours with molecular signs of increased chromosomal instability. No standard treatment has been established for metastatic meningioma and whilst the prognosis remains poor, molecular testing may help guide treatment with targeted immunotherapeutic agents

Subacute brainstem injury secondary to radiotherapy for Craniopharyngioma

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Purpose

Radiotherapy (RT) improves control rates in the of treatment of craniopharyngioma 1. Subacute brainstem injury as a side effect of brain RT is infrequently documented 2. The pathogenesis of radiation-induced injury is incompletely understood but various hypothesis of radiation vasculopathy have been speculated 3. We present a case of subacute brainstem injury following RT for a residual craniopharyngioma.

Materials and Methods

A 50-year-old female presented with a 4-month history of headache and visual disturbance MRI showed a cystic lesion in the suprasellar region. WHO Grade I craniopharyngioma was diagnosed following trans-sphenoidal surgery. Following discussion at MDT she was referred for RT and received 54Gy/30# rapid-arc IMRT. She was well at her 6-week follow up visit.

Results

Two-months later she presented with slurred speech and weakness. MRI revealed a signal abnormality left mid brain pons. The presumptive diagnosis was CVA and she was worked up and subsequently discharged as symptoms improved. Review of her radiotherapy plan showed that the anterior portion of the brainstem was in the PTV and her symptoms were likely a result of a subacute injury to the brainstem. On review in clinic her symptoms had improved further. She is due another MRI in 6 weeks to ensure continued healing.

Conclusion

The case highlights a rare, infrequently documented subacute reaction to radiotherapy in this region. It is generally treated with a course of steroids. The mechanism that results in this side effect is not fully understood but it is important to recognise it so it is appropriately treated.

Radiotherapy in recurrent myxopapillary ependyoma with multiple spinal metastases: A case report and review of the literature

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Purpose

Myxopapillary Ependymomas (MPE) are WHO grade I tumours that are biologically distinct from other spinal ependymomas. They have an estimated 1- year survival rate of >90%. A third recur at a median of 2 years from diagnosis 1. Paediatric MPE are more aggressive in nature and tend to have a higher recurrence rate 2. The initial management is laminectomy with surgical resection. Post-operative radiotherapy (RT) should be considered in patients who have undergone subtotal resection. Craniospinal irradiation (CSI) is recommended in those who have spinal dissemination 1. We present a case of MPE treated with CSI at our institution.

Materials and Methods

A 15-year old boy was diagnosed with MPE having presented with lower back pain. He had a laminectomy and debulking at T11-L2 and at S2-S3 few months later. He was discussed at the paediatric MDT and deemed unsuitable for adjuvant RT. Two years later he was found to have multiple spinal lesions on MRI extending between T1 and L3 consistent with leptomeningeal recurrence.

Results

Following a discussion at neuro-oncology MDT, he received CSI 36Gy/20# followed by a boost of 9Gy/5# to the spinal lesions. He tolerated treatment well and currently awaits follow up imaging.

Conclusion

This case highlights the importance of early intervention with adjuvant RT in MPE. Whilst there are no randomized trials, studies have shown adjuvant RT prolongs progression free survival following resection significantly 3. This should be considered in cases of subtotal resection of MPE and may reduce the recurrence rate and need for CSI for disseminated disease.

Subungal squamous cell carcinoma of the thumb- implications for patient setup and radiotherapy planning: A case report

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Purpose

Squamous cell carcinoma (SCC) of the nail bed is a rare finding and can often be mistaken for benign conditions such as fungal infection or onychomycosis leading to a delay in correct diagnosis. The clinical features are often non-specific; hyperkeratosis, verruca or a nail bed mass or within the lateral nail grooves. Risk factors for the condition include trauma, smoking, infection with human papilloma virus types 16 and 18(1) and radiation exposure and usually affects older adults, predominantly males(2). The authors present a case of a woman with a diagnosis of subungal squamous cell carcinoma (SSCC) of the right thumb which was treated with primary surgical excision and adjuvant radiotherapy due to a positive histological margin at the level of bone. Details of the radiotherapy setup and immobilisation are included along with dose details.

Materials and Methods

A 72-year-old female presented with a non-healing subungal tumour in the nail bed of the right thumb present for 18 months. Following referral to a plastic surgeon an initial excision biopsy revealed moderately differentiated invasive squamous cell carcinoma with positive margins. An extended excision of the tumour was subsequently performed identifying a 13mm invasive SCC, the depth of invasion at 2.5mm and with no evidence of perineural or lymphovascular invasion. The deep margin was positive at the position at the level of the bone and thus the patient was referred for adjuvant radiotherapy.

Results

The radiotherapy dose was 55Gy in 20 fractions, a hypofractionated course delivered at 2.75Gy per fraction. The setup was 3D-conformal four field technique using 6-MV photons. At the 18 month follow-up the patient showed no evidence of recurrence and made a full recovery with excellent range of motion and function of the thumb.

Conclusion

This case highlights the useful application of radiotherapy as a suitable option in the adjuvant setting for SSCC as an alternative to amputation.

Challenges in the management of squamous cell carcinoma of the urothelial tract: case series and review of the literature

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Purpose

Squamous cell carcinoma (SCC) of the urothelial tract is a rare, aggressive malignancy. It accounts for just 2-5% of bladder tumours(1). The mainstay of treatment is radical resection and lymph node dissection in non-metastatic cases. SCC are more likely to present with locally advanced (LA) or metastatic disease(2). Due to rarity of SCC, there is a lack of established protocols for chemotherapy or radiotherapy.

Materials and Methods

We present two cases of SCC of the urothelial tract treated with radiotherapy (RT) at our institution. We performed a literature review to identify published data on the management of SCC of the urothelial tract.

Results

A 47 year old with LA SCC of the bladder was referred for radical RT. A 63 year old developed a left psoas muscle metastasis 3 months post radical nephrectomy for a left renal SCC and was referred for palliative RT. Both patients experienced progression of disease (POD) during RT planning and treatment delivery. Both patients ultimately completed a palliative course of RT.

Conclusion

Our experience of SCC of the urothelial tract was of an aggressive, rapidly progressive disease. While surgery remains the standard of care, patients with LA or metastatic SCC present challenges for radiation oncology and medical oncology clinicians.

Primary central nervous system lymphoma: a case series and review of literature

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Purpose

Primary central nervous system lymphoma (PCNSL) is defined as diffuse large B-cell lymphoma solely confined to the central nervous system (CNS) and accounts 1% of all non-Hodgkin's lymphomas and 4% of all newly diagnosed central nervous system (CNS) tumours. Optimal therapy of PCNSL incorporates two phases: remission induction usually with Intensive methotrexate-based immunochemotherapy followed by consolidation in the form of whole brain radiation therapy (WBRT). We present 2 cases treated at our institution.

Materials and Methods

Data was extracted from electronic and written patient records. Information on patient demographics, clinical presentation, investigations, management and outcomes was collected.

Results

Case#1 is a 74-year-old patient, diagnosed with a 4.9 cm right-sided temporo-parietal mass, confirmed as PCNSL on biopsy. Initial treatment was with chemotherapy, however radiological recurrence was noted 4 months post completion of treatment. He was referred for WBRT for his recurrence. Case#2 was a 76-year-old patient, diagnosed a 1.5cm left-sided parietal lesion, confirmed as PCNSL on biopsy. Given her poor performance status, she was deemed unfit for chemotherapy and was referred for WBRT induction instead. Both patients are currently on WBRT.

Conclusion

PCNSL is an unusual but important differential diagnosis when considering CNS masses. Diagnosis includes radiological imaging and biopsy of suspicious lesions where possible, with or without cerebrospinal fluid (CSF) analysis. The main treatment protocols are derived from the National Comprehensive Cancer Network and British Society of Haematology guidelines. Our cases display the role of WBRT in both the induction of treatment and in the management of disease relapse.

A dramatic response to vismodegib as a precursor agent to radiotherapy in the treatment of a large basal cell carcinoma of the neck

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Purpose

We present the case of a 77 year old gentleman referred to the radiation oncology services with a 13cm x 14cm fungating basal cell carcinoma on the posterior aspect of his neck, for consideration of primary radiotherapy.

Materials and Methods

This gentleman was not considered a candidate for surgical intervention due to the large nature of his tumour, its degree of local invasion and his background medical history. A decision to proceed to radiotherapy was deferred on the basis of this patient's tumour size and the reduced efficacy of radiotherapy in larger more advance tumours

Results

Following treatment with vismodegib, he displayed a dramatic response with tumour regression to 2cm x 3cm and has proceeded to definitive radiotherapy.

Conclusion

This case highlights the significant benefit of vismodegib in the neoadjuvant & multimodal setting in downstaging unmanageable extensive basal cell carcinomas to facilitate definite treatment.

Case Series: Radiotherapy treatment of Desmoid Fibromatosis, a single center experience

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Purpose

Desmoid-type fibromatosis (DF) is a rare monoclonal, fibroblastic proliferation that arises in the deep soft tissues and is characterized by infiltrative growth. DF is a distinct rare entity (5-6 cases per 1 million per annum) with a peak age of 30–40 years with a female predominance. It has clinical course that varies from complete resolution without treatment to aggressive disease that progresses or recurs locally but does not metastasise. Historically the treatment of DF was surgery but in the last 2 decades observation, systemic therapy or definitive radiotherapy have become the dominant treatments of choice

Materials and Methods

We present a case series of patients treated with definitive radiotherapy at our institution. The first patient had DF in the posterior upper aspect of the right chest wall diagnosed in 2012 with relapsed disease causing significant pain in 2015. He was treated with 56Gy/28# using Rapid Arc, gained a complete clinical response and remains radiologically disease free at 5 years. The second developed a tumour in the right axilla with progressive disease following initial resection and resection of positive margins in 2016. She was requiring regular oral opiates and ketamine infusions with limited benefit. She was treated with 56Gy/28# in 2017. She remains in clinical and radiological remission. The third was treated in June 2020 with 54Gy/27# for a 10cm mass in the left axilla/lateral chest wall. To date his disease appears to be slowly responding.

Results

All three patients had an excellent response without significant toxicity.

Conclusion

Although radiotherapy is not the first line treatment for patients with DF our series highlights the potential for excellent clinical outcomes in line with currently published guidelines. Consideration should always be given to the potential late effects of radiotherapy especially in tumours that are not frankly malignant.

A case of radiotherapy for locally-advanced breast cancer on a background of Mantle-field irradiation; a visual guide to the treatment challenges.

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Purpose

To outline the challenges in delivering breast radiotherapy within a previously heavily irradiated field.

Materials and Methods

A young female was referred for post-operatively radiotherapy for ypT3ypN3a breast cancer. She received mantle field radiotherapy for mediastinal lymphoma thirteen years previously. Adjuvant radiation, 50Gy/25#, to the reconstructed breast and regional lymph nodes was recommended. The brachial plexus (BP) was identified as the dose-limiting organ-at-risk.

DRRs with an overlaid dose distribution from the Mantle-field treatment were obtained. Significantly, the plan Dmax of 109.7% was located in close proximity to the BP, within a larger area of relatively high dose (>105%).

Steps taken during planning process:

1. Literature review regarding BP tolerance to re-irradiation
2. Calculation of previous BP maximum biologically effective dose (BED)
3. CT Simulation with immobilisation
4. Delineation of target volumes and BP
5. Creation of 3D conformal and VMAT plans, review of coverage and BP dose, and further optimisation to limit dose adjacent to BP
6. Calculation of current and cumulative BP BED, and cumulative BP BED assuming 50% recovery.

(Images from the prior Mantle field radiation and a comparison of the 3D and VMAT plans would be illustrated)

Results

Previously, the mediastinum, axillae and bilateral neck received 36Gy/20, and the paraaortic nodes received a further 19.8Gy/11#. The BP received approximately 38Gy.

45Gy/25# and 16Gy/8# boost was delivered for treatment of her breast cancer. The BP Dmax= 41.4Gy. Assuming approximately 50% recovery, the plan sum dose to the BP is 59-64Gy.

Conclusion

This case highlights the role of highly conformal radiotherapy in challenging retreatment cases.

The role of SABR in oligometastatic lymph node recurrence

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Purpose

Stereotactic Ablative Radiotherapy (SABR) plays an important role in the management of oligometastatic disease. We present a case of the use of SABR in the setting of oligo-recurrent breast carcinoma involving a solitary supraclavicular lymph node and discuss the rationale of patient selection, dose and fractionation schedules, treatment outcomes and toxicities

Materials and Methods

A 59-year-old female, presented in 2016 with left sided, locally advanced inflammatory breast cancer. Following neoadjuvant chemotherapy, mastectomy and axillary clearance, she received adjuvant radiotherapy 50Gy/25# to left chest wall, supraclavicular fossa (SCF). Two years later she presented with a painful, solitary left supraclavicular fossa (SCF) mass at the edge of the previous radiation field, biopsy of which confirmed recurrent breast carcinoma.

Results

Following discussion at MDT she was referred for consideration of SABR and went on to receive 30Gy/5# to the left SCF mass. SABR was tolerated well with no reported acute toxicity. She had an excellent local response clinically, however 6 months later presented with an in-field relapse of disease. She was subsequently referred for systemic treatment.

Conclusion

SABR is being used frequently in the management of oligo-metastatic cancer with improvements in disease-free and overall survival for appropriately selected patients with low volume of disease. This has been shown in several recent randomised phase II trials. Many of these trials of SABR in oligometastases combined visceral and lymph node metastases and generally contained low numbers of lymph node metastases. Further studies are needed to define the usefulness of SABR in lymph node oligometastases.

The role of radiotherapy in Kaposi's sarcoma – an illustrated case report and discussion of aetiology and treatment

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Purpose

Kaposi's sarcoma (KS) is a rare endothelial neoplasm invariably associated with Human Herpes Virus 8 (HHV8). Four variants of KS have been described – Classic KS, seen in elderly men of Mediterranean descent; Endemic African KS; Iatrogenic KS; and AIDS associated KS. HHV8 is the underlying aetiology in all variants and its seroprevalence varies geographically.

Materials and Methods

We report a case of KS in an immunocompetent, HIV negative, 48 year old Irish gentleman with no travel history to endemic regions. MF was referred to our service for a radiation oncology opinion on treatment options for relapsed KS after treatment with liposomal doxorubicin. Clinical examination revealed a nodular lesion over his right lateral malleolus

Results

A dose of 12Gy/2# was prescribed (plan images available) and treatment delivered with opposed tangential MV photon fields.

Conclusion

The incidence of KS is low in Ireland with an average of 6 new cases per year KS is a radiosensitive tumour and RT has been shown to enable local control of isolated mucocutaneous lesions and symptom control. However, there is little robust evidence to guide treatment of KS. Our case is one of several describing KS in young immunocompetent patients in non-endemic regions. This case highlights a gap in the understanding of the aetiology of KS and HHV8 transmission, and the need to develop best practice evidence-based treatment guidelines.

Redesigning the radiotherapy electronic treatment request form; a quality improvement project.

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Purpose

SLRON is the largest radiotherapy facility in Ireland, treating over 4,500 new patients annually. All radiotherapy treatment is booked using an electronic treatment request form (ETRF). Previous audit identified that one third of forms require amendment after submission, which may lead to treatment delays. We present a quality improvement initiative designed to improve the usability and functioning of the ETRF.

Materials and Methods

After identifying the relevant stakeholders, we conducted a feedback exercise regarding the functioning of the current ETRF. The frequency and cause of amendments were analysed over a 2 week period. We distributed an online questionnaire for both medical and non-medical staff. An additional in-person feedback exercise was undertaken. This information was collated and incorporated into a review and redesign of the ETRF.

Results

92 responses were received from medical, radiation therapy, physics, planning, nursing and administration staff. 34.7% of subjects surveyed spend 3-5minutes working time per form, while 4.3% spend 5-10 minutes per form. 88.88% agree the form could be improved, 43.47% feel there both is irrelevant or too much information on form. A broad variety of suggestions for improvement were outlined. The content, layout and format of the ETRF has been edited based on above results. Repeated feedback measures are currently underway.

Conclusion

Having identified areas for improvement in the booking process, a redesigned booking form has been redistributed. Further feedback measures, currently ongoing, will analyse the impact of these changes on the booking process.

St Luke's Radiation Oncology Network; Audit on time from Surgery to Post-operative Radiotherapy in Head & Neck Squamous Cell Carcinoma

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Purpose

Numerous studies show significantly worse survival in head & neck cancer (HNSCC) with a delay (>6 weeks) between surgery and post-operative radiotherapy (PORT). 1, 2
The aim of this audit is to explore the timing of PORT in HNSCC patients in our institution and to identify causes of delay and to formulate an improved multidisciplinary pathway with minimal extra resources.

Materials and Methods

Data was collected from ARIA on 53 consecutive patients who received PORT for HNSCC between July 2019 to February 2020; date of Surgery, date of MDT, date of initial OPD, date of "Ready to treat" (RTT), need for dental hospital – stent and date of Radiotherapy start.

Results

53 patients received PORT for HNSCC during this time; 36 oral cavity, 7 larynx, 2 hypopharynx, 8 nasal cavity/paranasal sinus. 13 (24%) received treatment <6 weeks from surgery (range = 21-42 days). 21 (40%) received treatment 6 - 8 weeks from surgery (range = 45 – 56 days). 19 (36%) received treatment >8 weeks from surgery (range = 58 – 136 days). Median interval between surgery & PORT was 53 days (approx. 7.5 weeks) (range 32 – 136 days). Only half the patients are meeting institution KPI.

Conclusion

Only 24% of patients met international recommendations which is a poor result so this has led onto identifying areas in the pathway which could be improved. Action plan is to introduce a Dental Surgeon to be part of the MDT to help streamline and reduce time for stents. Aim to discuss with NCCP re reducing KPI of RTT to Radiotherapy start date. Aim to re-audit in 12 months' time.

Concordance of MRI PI-RADS lesions and Gleason score on Transperineal biopsy: A retrospective review

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Purpose

Selected cases with discordant results of PSA, biopsy and imaging are referred for Transperineal (TP) prostate biopsy either to confirm diagnosis or the clinical significance of their disease. This study aims to review the concordance of MRI PI-RADS lesions in patients who had TP biopsy.

Materials and Methods

A retrospective observational study was performed on 70 patients who underwent a diagnostic TP biopsy over a 24-month period and had a pre-op MRI. Assessment of initial PSA, MRI findings, TRUS biopsy and TP biopsy results was performed in these patients.

Results

A PI-RADS≥3 lesion was reported in 45/70 patients (64%). 91% of patients with a PI-RADS ≥3 lesion on MRI were subsequently diagnosed with prostate cancer (n=41). 36% (16/45) of patients assigned a PI-RADS score ≥3 were confirmed to have clinically significant disease (Gleason 3+4 or higher), 56% (25/45) were Gleason 6 and 9% (4/45) were benign. 25/70 patients did not have a PI-RADS≥3 lesion on MRI, 88% (22/25) of these patients had benign or Gleason 6 pathology.

Conclusion

Radiologists use the Prostate Imaging Reporting and Data System (PI-RADS) to report how likely it is that a suspicious area is a clinically significant cancer. In our study, PI-RADS score and subsequent TP biopsy were concordant in 61% of cases.

Salvage SABR: In-field retreatment for NSCLC

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Purpose

Treatment options for local recurrence of NSCLC previously treated with radical radiotherapy are limited. Salvage stereotactic ablative radiotherapy (SABR) is an emerging option to treat local recurrences with radical intent.We present a case of thoracic in-field recurrence, and detail the potential management strategies including important considerations such as patient selection, prognosis, toxicity and planning considerations.We also present a literature review of salvage SABR for recurrence of NSCLC

Materials and Methods

We describe the case of an 84 year old man with a thoracic in-field recurrence in the LUL. The time to recurrence from initial radical treatment (66Gy/33# + chemotherapy) was 4 years.
The complexities of planning and delivering precision RT to a previously irradiated thoracic target are demonstrated with imaging and analysis of the cumulative doses and the biologically effective dose for the relevant OARs in this case.

Results

In this case, salvage SABR of 52.7Gy in 7 fractions was well tolerated. BED data is given for the critical OAR's, which were the brachial plexus and great vessels in this case. Surveillance CT demonstrated a good initial treatment response.Management strategies for an infield recurrence are discussed, including surgical, SABR, EBRT and systemic options. Case selection remains paramount for patients being treated with salvage SABR, with target location, size and time from previous radiation being key indicators of prognosis and survival. We also present a literature review of salvage SABR for recurrence of NSCLC, with encouraging data for proceeding with treatment in this case.

Conclusion

Salvage SABR is can be a safe and well tolerated treatment option for re-irraditaion of local NSCLC recurrence. Careful consideration for patient selection is paramount and literature review shows reasonable rate of 2 year survival and tumour control

The Implementation of a COVID-19 swab clinic to minimise radiation therapy treatment gaps

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Purpose

To ascertain the effect of implementing a COVID-19 swab clinic on breaks in ongoing radiotherapy for patients attending SLRON. Unplanned interruptions in treatment have detrimental effects on local control and cure rates1. This is particularly so for head and neck squamous cell carcinomas, cancers of the cervix, the lung, the oesophagus, medulloblastoma and primitive neuroectodermal tumours, and anal squamous cell carcinomas. Minimizing these interruptions are therefore imperative in a specialist Radiation Oncology Centre. The effect of COVID-19 on staffing, patient attendances at clinics, and treatment unit turnaround times (with cleaning) adds to the complexity of treatment. The establishment of the COVID-19 swab clinic at SLRON minimized radiotherapy disruptions, patient anxiety and Personal Protective Equipment use.

Materials and Methods

Patients who attended the COVID-19 swab clinic from 02/04/2020 to 02/07/2020 were retrospectively identified using the local electronic medical record system at SLRON (ARIA). Demographics, primary diseases, treatment gaps, and radiation treatment plans were recorded.

Results

69 swabs for the detection of COVID-19 were taken. 48 (69.6%) of all swabs were taken from females. 43 (62.3%) were screening swabs (in advance of admission for radio-active isotope, or operation in theatre). 26 (37.7%) swabs were taken from patients who reported one or more symptoms consistent with COVID-19. Symptoms reported by patients include: dyspnoea (6) (23.1%); fever (3) (11.6%); cough (18) (11.5%); sore throat (9) (34.6%); anosmia (1) (3.8%); headache (1) (3.8%); malaise (1) (3.8%).
COVID-19 was detected on 2 swabs (2.9%). 1 swab was indeterminate (1.4%). 1 was invalid for analysis (1.4%). COVID-19 was not detected on the remaining swabs (92.8%).Mean turn-around time for results was 1 day (range 0 – 4 days). For patients who were symptomatic (in whom radiotherapy was held), average break in radiotherapy was 6 treatment days (range 0 – 20). 52 swabs were taken on category 1 treatment patients; 6 on category 2 patients, and 9 on category 3 patients.

Conclusion

The mean time for swab result was one day, compared with 3 days or longer through the service provided by other testing centres2. Test waiting times were also reduced, although it is difficult to quantify this as the national service capacity increased throughout the first 4 months of the pandemic.The ease of testing for cancer patients was also improved, as they could attend a service familiar to them at a designated time, as opposed to a drive through centre. The COVID-19 swab clinic at SLRON therefore resulted in shorter treatment gaps, improved cancer outcomes, less unnecessary PPE use, and better patient satisfaction.

Salvage radiotherapy for isolated Paraaortic nodal recurrence following definitive treatment for cervical cancer - A single institution experience

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Purpose

Research shows that salvage treatments for para-aortic recurrences can result in good local control and progression free survival in patients with cervical cancer. The use of concurrent chemoradiotherapy where possible is superior to radiotherapy alone. Patients who are asymptomatic of the recurrence have the best outcome

Materials and Methods

Records of patients treated with salvage radiotherapy at our institution were reviewed retrospectively. 6 patients were identified as having radiotherapy for isolated para-aortic recurrences between 2014-2020. 5 of these received a radical dose of radiotherapy. Median age at diagnosis was 51. Stage at diagnosis ranged from Figo 1b to 3. All recurrences were diagnosed using a PET CT.

Results

Median interval between finishing definitive treatment and recurrence was 23 months. Of the 5 patients receiving radical doses, 1 received SABR 25gy in 5#, 4 received IMRT 45gy in 25# to the entire para-aortic region and a boost 55-60Gy to the involved node. 2 patients received concurrent chemotherapy. Median follow up was 21 months. 2 patients had distant relapses within 6 months of initial salvage treatment, However, 1 was salvaged with further radiotherapy. 66% (4/6) remain disease free at time of follow up. 2 patients who received concurrent chemotherapy are disease free at 24 and 52 months.

Conclusion

Salvage radiotherapy for paraaortic recurrence can result in good local control and disease free survival. Concurrent chemotherapy improves outcomes. Overall treatment was well tolerated. Our findings are in keeping with international reports. Role of Stereotactic radiotherapy in this scenario is currently under investigation.

Anaplastic Thyroid Cancer: Outcomes of Trimodal Therapy

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Purpose

To assess the impact of trimodal therapy [surgery, chemotherapy and external beam radiotherapy (EBRT)] in patients with anaplastic thyroid cancer (ATC) treated with curative intent.

Materials and Methods

Retrospective review of patients with ATC treated at tertiary referral centre between January 2009 and June 2020. Data were collected regarding demographics, histology, staging, treatment and outcomes.

Results

Seven patients (4 female) were identified. Median age was 51.7 years (range 35.4-63). All patients received EBRT with concurrent doxorubicin. Six patients received surgery followed by chemoradiotherapy (CRT), and one underwent neoadjuvant CRT followed by surgery. Median radiological tumour size was 50mm (range 40-90mm). Six patients had gross extrathyroidal extension and three had N1b disease. Prescribed radiotherapy schedules were 46.4Gy in 29 bidaily fractions (n=2, treated 2010), 60Gy in 30 daily fractions (n=2), 66Gy in 30 fractions (n=2) and 70Gy in 35 fractions (n=1; patient received neoadjuvant CRT). CRT was discontinued early for two patients due to toxicities. At median follow up of 5.8 months, three patients (42.9%) are alive and disease-free. Only one patient developed local failure. Three patients died from distant metastases without locoregional recurrence.

Conclusion

Despite poor prognosis of ATC, selected patients with operable tumours may achieve high locoregional control rates with trimodal therapy, with possibility of long-term survival in some cases.

Effects of percutaneous endoscopic gastrostomy placement on nutritional status and admission rates in head and neck cancer patients undergoing radical radiotherapy; a retrospective analysis.

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Purpose

To analyse the impact of prophylactic percutaneous endoscopic gastrostomy (PEG) tube placement on weight loss and admission rates in patients with head and neck cancer (HNC) undergoing radiotherapy.

Materials and Methods

This retrospective observational study includes all patients in our department who underwent radical radiotherapy (prescribed ≥ 60 Gy) for primary HNC, over a 12-month period (n=77). Analysis of age, gender, primary tumour site, TNM stage, treatment pathway, weight, PEG placement and admission for feeding was carried out on these patients.

Results

The median age was 64. 42 (55%) patients had concurrent chemotherapy and 35 (45%) patients had adjuvant radiotherapy alone. The median percentage weight loss recorded was 7.6% (range -2.7%-18.7%). 24 (31%) patients had a PEG placed prophylactically. The median percentage weight loss in patients with a PEG was 7.48% vs 7.21% in patients without a PEG. These groups were well matched in terms of age and gender. 27 (35%) patients required admission to hospital during treatment, of which 19 (79%) were for a feeding-related issue. 74% (n=14) of patients admitted for a feeding-related issue did not have a prophylactic PEG in place.

Conclusion

This study demonstrates the difficulties in maintaining nutritional status for HNC patients undergoing radiotherapy. Prophylactic PEG placement did not prevent weight loss, but did reduce the admission rates for feeding-related issues. Nutritional support is a critical part of the management of HNC patients undergoing radiotherapy.

Spontaneous pregnancy following pelvic irradiation for anal cancer: A Case Report

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Purpose

Chemoradiotherapy using 5-FU and mitomycin has been the standard treatment for anal cancer since the ACT 1 trial. Unfortunately, the dose of radiotherapy used to treat anal cancer is usually high enough to sterilise the ovaries. Thus, spontaneous pregnancy following pelvic radiotherapy is extremely rare.

Materials and Methods

A 26-year-old woman, para 1 and on triple therapy for HIV, was treated with pelvic radiotherapy 50.4 Gy [30.6 Gy/17 fractions (phase 1) , 19.8 Gy/11 fractions (phase 2)] with concurrent 5-FU and Mitomycin C for grade1, cT1N0M0 squamous cell cancer of the anus. Her left ovary was transposed into the abdomen prior to treatment to maintain pre-menopausal status. Her right ovary received over double the effective sterilising dose of radiation. Her treatment response was excellent with no evidence of disease on post-treatment imaging. Somewhat unexpectedly, she continued to menstruate with a regular cycle post-treatment. Hysteroscopy to investigate this bleeding demonstrated a small uterine cavity of normal appearance. Endometrial curettings were normal histologically. Colposcopy was also normal. Five years later she spontaneously conceived and vaginally delivered a small-for-dates, but otherwise healthy baby, requiring a significant episiotomy during delivery

Results

There are three factors in this case that are interesting due to the rarity of their occurrence. Firstly, the probability of spontaneous conception was extremely low considering this patient received over twice the effective sterilising dose to her right ovary (ESD at 26 years old is approximately 15 Gy) during treatment for her anal cancer(1). Furthermore, although previous hysteroscopy in this patient had described a small uterine cavity, she successfully carried the fetus to 36 weeks' gestation which is unexpected due to the changes usually seen in the post-irradiated uterus(2). Finally, her vaginal delivery of a 3.5 pound baby is remarkable considering radiotherapy often renders the vaginal canal completely scarred and stenosed.

Conclusion

This case highlights the need to remind patients that although rare, pregnancy is still possible after pelvic radiotherapy and contraception should be considered where necessary. Furthermore, both gestation and delivery carry high risk to the fetus due to the radiation effects on the uterus and vagina.

A Rare Case of PEG-site Metastasis from Oesophageal Cancer

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Purpose

Dysphagia and malnutrition are frequently seen in patients with oesophageal cancer. Percutaneous Endoscopic Gastrostomy (PEG) feeding is a well-established method of nutritional support. Metastatic disease to the PEG-site is exceedingly rare.

Materials and Methods

A 67-year-old gentleman completed definitive chemoradiotherapy (50.4Gy/28Fr) for locally advanced T4N3 oesophageal adenocarcinoma. His tumour was located in the upper third of his oesophagus and due to dysphagia and malnutrition, a PEG tube was inserted for nutritional support at presentation. He showed an excellent response to chemoradiotherapy and re-staging PET scan showed almost complete resolution of the primary tumour with total resolution of the metastatic lymphadenopathy. However, intense tracer uptake was noted in a soft tissue mass adjacent to the gastrostomy. Clinically, this represented a granulomatous lesion at the PEG site that grew staph aureus on culture. However, treatment of this did not respond to antibiotics and soon the surrounding tissue became fungating, malodorous and haemorrhagic.

Results

An OGD was performed to further investigate. Biopsies from the oesophagus showed only inflamed granulation tissue however the PEG site biopsy revealed an invasive, well differentiated adenocarcinoma. He underwent an abdominal wall and partial gastrectomy resection with negative margins histologically. He recovered well from the surgery and follow-up OGD with biopsies taken was normal. Unfortunately, four months post-operatively he re-presented with dysphagia, weight loss and hoarseness. OGD was unsuccessful due to oesophageal obstruction and laryngoscopy demonstrated fixed vocal cords. Re-staging MRI revealed a large circumferential oesophageal tumour with significant extension to involve the glottis, subglottis and thyroid cartilage. Metastatic disease was subsequently identified on imaging of the brain.

Conclusion

This complex case highlights an aggressive oesophageal tumour with metastasis to the PEG-site which is extremely rare in oesophageal cancer

Scalp radiotherapy setup

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Purpose

To evaluate patient positioning for radiotherapy to the scalp in relation to setup reproducibility, bolus accuracy and toxicity

Materials and Methods

A search was performed using the ARIA database for all patients who had a CT planning scan for skin radiotherapy between 2017 and 2019 within 2 radiotherapy centres.Patient's scanned in any position were included in the study.

Results

A total of 13 patients were identified in one centre. Mean age was 74. All underwent surgical resection prior to RT, with total scalp dose of between 50Gy and 70Gy. Of these, 10 were scanned in the supine position, 2 were scanned in the prone position, and 1 in a modified prone position. In total, 46% of patients required a replan during treatment. Replans were required due to recurrent disease, discomfort (prone patient) and issues with wiring of disease. Acute toxicities were acceptable.Prone positioning was used in 3 cases for patients with posterior scalp or large scalp vertex lesions. One of these patients required a customised head rest to enable treatment. Another was a complex case requiring a replan for several issues including patient comfort. A sub-analysis of this case was carried out to investigate specific issues in positioning and bolus accuracy.A total of 20 patients from the second centre will analysed and presented in full.

Conclusion

Increased comfort is demonstrated in the supine position especially in older and more frail patients. On plan analysis, there was no significant difference in prone and supine target coverage. However, bolus accuracy and reproducibility was an issue in those scanned supine for posterior scalp lesions. The use of customised headrests are an option or scanning prone where judged that patient will tolerate same.

Accelerated Partial Breast Irradiation with the Mammosite Technique: A Single Institution Prospective Study

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Purpose

Accelerated Partial Breast Irradiation (APBI) involves the delivery of high doses of radiation therapy to the tumour cavity with a 1-3cm margin. Limitations in the generalisability of interstitial brachytherapy based APBI led to the development of applicator based techniques such as the Mammosite technique. The aim of our study was to investigate the long-term feasibility of Mammosite Accelerated Partial Breast Irradiation for early stage breast cancer.

Materials and Methods

A single institution prospective study was undertaken at University Hospital Galway between November 2005 and October 2012. Node negative, unifocal tumors of less than 3cm with negative surgical margins were included. A Mammosite applicator was inserted postoperatively and a dose of 34Gy in 10 fraction was delivered twice daily.

Results

62 patients were recruited to the study. The median age was 60 and the median follow-up was 10 years. 91.9% (57/62) completed the full course of Mammosite treatment. At final follow-up , 6.4% (4/62) of patients had developed an ipsilateral breast tumor recurrence. Five- and ten-year disease-free survival was 97% and 87% respectively. There was no association between disease free survival and tumour size (HR1.01 (95%CI: 0.92-1.1) p=0.78) or patient age (HR1.01 (95%CI: 0.93-1.1) p=0.77). The most common reported toxicities were fibrosis (67.7%), pain (61.3%) and skin erythema (35.5%)

Conclusion

This prospective series demonstrates the feasibility of the Mammosite technique in a typical radiotherapy setting in Ireland.