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RESEARCH ARTICLE

OCCIPITAL BONE METASTASIS REVEALING A PAPILLARY THYROID CARCINOMA: CASE REPORT

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Abstract

A 45-years-old manwas diagnosed with occipital bone metastasis of papillary thyroid carcinoma. He presented an eight cm occipital bone mass with two years of evolution. The CT scan showed an81,3 x 52,7 x 61 mmtumour of occipital bone with meningeal, brain and soft tissue invasion. The biopsy confirmed thyroid origin of the mass.Three other osteolytic lesions were noted: left ischium, D4 and L1 with medullary canal invasion.He received a total dose of 20Gy of conformal 3D radiotherapy in 5 fractions, at a daily dose fraction of 4Gy over one week to the four lesions.

Introduction:-

Thyroid cancer is the fifth most common cancer among females worldwide(1). Papillary thyroid carcinoma is the most common primary malignant neoplasm of the thyroid gland and distant metastases are rare.

We report a case of occipital bone metastasis revealing a papillary thyroid carcinoma with a review of the literature.

Case Report:

Our patient is a 45-years-old man, with no pathological history. He presented two years before his consultation in our department,a progressively growing painless occipital mass. No other symptoms were reported.

Since the mass was about eight cm long, our patient finally consulted a general practitioner then the ear-nose-throat (ENT) department of the Hassan II University Hospital ofFes. A cerebral CT scan was requested and biopsy was performed.

The CT scan showed an osteolytic mass of the occipital bone, intensely contrast enhanced, measuring 81,3 x 52,7 x 61 mmwith periosteal reaction and soft tissue invasion.The mass extends to the brain with meningeal thickening extending to the superior sagittal sinus in its posterior segment. (figure 1)

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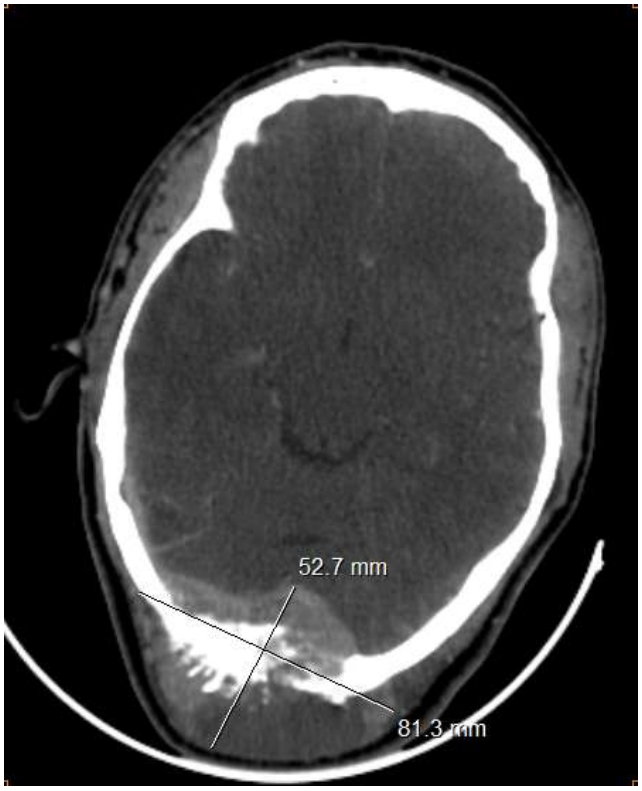

Figure 1:- Cerebral injected CT scan of our case, showing the osteolytic tumourof the occipital bone with intracranial and soft tissue invasion.

A biopsy of the tumourrevealedtumoral proliferation with papillary architecture.Immunohistochemistry shows tumor cells TTF1+, thyroglobulin+ and CK7+. They do not express CK20, CDx2 orPSA.

Chest abdomen and pelvic CT scan; showeda large plunging goitre measuring 93 x 69 x 90 mm with a suspicious 28 mm node. Three other osteolytic lesions were noted: left ischium, D4 and L1 with medullary canal invasion. (figure 2)

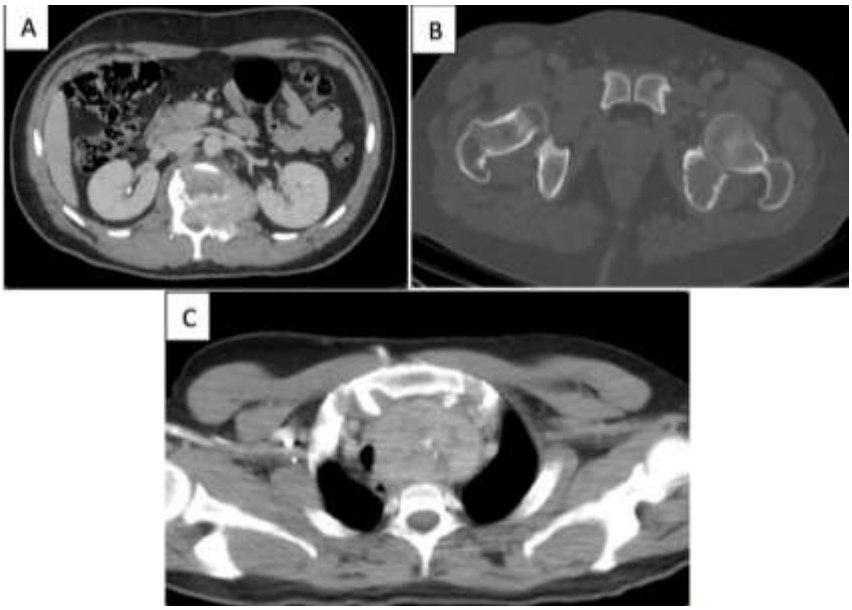

Figure 2:- Chest abdomen and pelvic injected CT scan showing osteolytic lesions of L1 (A) with medullary canal invasion, left ischium (B), and theplunging goitre (C).

The case was discussed in the multidisciplinary tumor (MDT) board and the decision wasdecompressive radiotherapy for osteolytic lesions (since surgery was not feasible), PET CT scan, thyroid assessmentand potential radioactive iodine therapy following surgery of the goitre.

He received a total dose of 20Gy of conformal 3D radiotherapy in 5 fractions, at a daily dose fraction of 4Gy over one week to the occipital, D4, L1 and left ischium lesions. (figure 3)

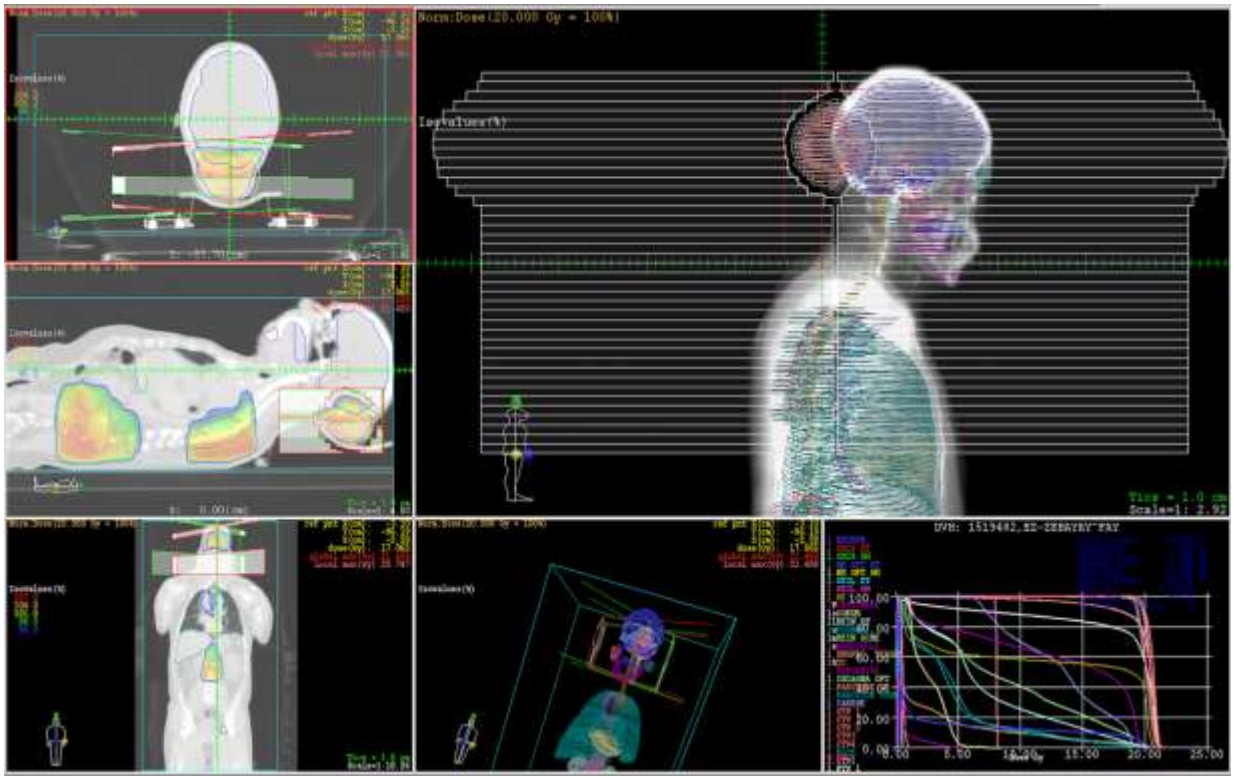

Figure 3:- Disposition of multiple 3DRT beams and dosimetry images of the 95% isodose conforming to PTVs (Planning Target Volumes).

He received hisradiotherapy as planned with no side effects. he is currently followed up at the thoracic surgery department for further treatment.

Discussion:-

Papillary thyroid carcinoma is usually a good prognosis cancer with a slow progression. Only 2-10% of the patients have distant metastases, the most common being in the lung.(2)

However bone metastases in thyroid cancer are, independently associated with poor/worse prognosis with a median overall survival from detection of only four years.(3) They occur in only4% of all thyroid cancer.Distant metastasis at initial diagnosis is very rarely found in papillary thyroid cancer(4)

Thyroid cancer may remain asymptomatic for extended period of time due to its slow evolution. Early detection and health surveillance for thyroid cancer in asymptomatic individuals have also been associated with overdiagnosis and overtreatment(5).

For high-risk papillary cancer patients, total thyroidectomy and neck dissection followed by radioisotope ablation are recommended. For distant metastasis, it is suggested to give adjuvant high dose thyroid ablation up to 200 mCi after levothyroxine withdrawal(4,6). Bone remodeling treatment using bisphosphonates and external beam radiotherapy are recommended.

Surgery followed by radiotherapy usually result in better outcome. If surgery is not feasible, radiotherapy for 20–30 Gy in 5–10 fractions is recommended. Palliative radiotherapy can relieve pain and other neurological complications although the effects are usually attained 2–3 days after the treatment.(3)

Conclusion:-

Papillary thyroid carcinoma is generally associated with good prognosis and can remain asymptomatic with possible initial diagnosisdelay, which can affect patient's quality of life and prognosis as was the case with our patient.

Consent:
The examination of the patient was conducted according to the Declaration of Helsinki principles.

Conflicts of interest:
The authors do not declare any conflict of interest

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