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Editorial

By Dr David Muscat

Dear colleagues,

We would like to welcome into the fold the new dental graduates namely Doctors Amy Casha, Anne Camilleri, Lisa Marie Gatt, Pippa Agius, Ethan Warren Muscat, Shantelle D'Amato, Katrina Debattista, Charlotte Axisa and Ruth Mifsud.

We will be featuring some of their excellent UOM, OMSR Oral Medicine, Oral Surgery and Radiology case reports with the kind permission of the Head of Department Dr Gainza as well as that of their respective tutors.

At the time of writing this editorial we have fully booked the lecture on endodontics by Dr Maria Xuereb as well as the CBCT course.

We have two further lectures in the offing, one on occlusion and one on paediatric dentistry.

It is a pity that the Smile For Health conference is no longer being held. However, local dental companies are organising several hands-on courses as well as lectures and seminars towards the end of the year. This is very encouraging.

The cover page is by Jacqui Agius –entitled '*Mgarr Harbour, Gozo*.'

I hope you all had a good Summer. A September storm rages outside and Autumn beckons. There will soon be the rustle of fallen leaves circling in eddies and snails will emerge in the early morning after the night showers.

The cicadas will not shriek so loudly and the lizards will be more prominent sliding in and out of the rubble walls. The golden eyed gecko will climb ever higher onto the branches of the almond tree trying to warm up its cold blood and the fat black beetles will roll away animal waste into their hideaways. The Bird of Paradise will be more upright and sprightly and the seeds from the palm tree will fall onto the sodden ground.

The Praying Mantis will eye its next victim as it uses its camouflage as the white collar dove coos at the top of the overgrown yucca..

The pomegranate tree will bear its fruit and the nourished caper bushes hang out from every bit of soil in every tiny crack in the cliffs.

The waves lash at the shore and people go about their daily business, coming to terms with the new season, and all that it may bring.

David

Dr David Muscat B.D.S. (LON)
Editor / Secretary, P.R.O. D.A.M.

A group photo of the cohort of students in the same year at Dental School in Malta with Drs John Vella Bardon, Bernard Bezzina, Simon Muscat, Ross Elledge, James Portelli and Natasha Azzopardi at the lecture on TMJ by Mr Ross Elledge at Xara Lodge, kindly sponsored by Pro Health. A great reunion!

The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

Oral Medicine, Surgery, Pathology and Radiology Case Report

Author: Lisa Marie Gatt, Master of Dental Surgery – Year V

ABBREVIATIONS USED

CBCT	Cone Beam Computed Tomography
ENT	Ear, Nose and Throat
OKC	Odontogenic Keratocyst
MRI	Magnetic Resonance Imaging
OPG	Orthopantomogram
PDL	Periodontal Ligament
WHO	World Health Organization

ABSTRACT

Background: *The study provides a comprehensive overview of the current understanding of ameloblastoma, highlighting the importance of 3D imaging modalities for assessment and extent of the lesion which helps to narrow down the differential diagnosis and ultimately the treatment plan. Histopathological analysis remains the gold standard for diagnosis.*

Introduction: *Ameloblastoma is a benign but locally aggressive odontogenic tumour (1) that arises from the epithelial cells of the dental apparatus. It is the second most common odontogenic tumour between the third and fifth decade, with an up to 85% predilection for the mandible (2).*

Case report: *This paper reports a rare case of conventional ameloblastoma presenting in the posterior maxilla. Radiographic analysis shows a unilocular radiolucent lesion with cortical bone expansion extending into the maxillary antrum and displacing the medial wall of the nasal cavity. Histological analysis confirmed this lesion as a conventional ameloblastoma. The patient underwent a partial maxillectomy under general anaesthesia, and subsequently attended regular follow-up appointments post-surgery.*

Discussion: *The aim of this report is to evaluate how the radiological features aid in differentiating ameloblastoma from other lesions and how the combination of radiological and histopathological analysis is important to devise the most appropriate treatment plan which will ultimately affect the prognosis. Furthermore, this case is unusual because this subtype of ameloblastoma more commonly presents as a multilocular radiolucency.*

KEYWORDS

Ameloblastoma, CBCT, MRI, maxillary sinus

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The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

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INTRODUCTION

Ameloblastoma is a benign epithelial odontogenic neoplasm. The global prevalence rate is of 0.5 per million annually.

Although rare, ameloblastoma is the second most common type of odontogenic tumour following odontomas. Ameloblastoma occurs predominantly in the third to the fifth decade and has an equal gender predilection. It usually presents as a painless locally aggressive tumour causing bone expansion along with perforation of the lingual or buccal plate, and infiltration into soft tissue. Up to 85% of cases are found mainly in the ramus and posterior body of the mandible (2,3).

According to the World Health Organization (WHO) 2017 classification ameloblastoma is divided into conventional, unicystic, peripheral, and metastasing ameloblastoma (2). The most common radiographic appearance is a multilocular radiolucency described as a "soap-bubble" appearance. However, a small percentage (30-49%) present as a unilocular radiolucency (4).

Since unilocular ameloblastoma is usually associated with an impacted tooth, it may be difficult to differentiate between an odontogenic keratocyst (OKC) or a dentigerous cyst on conventional radiography. At its early stages a unilocular ameloblastoma may also radiographically appear similar to a radicular cyst. This paper reports a rare case of conventional ameloblastoma presenting in the posterior maxilla. Radiographic analysis shows a unilocular radiolucent lesion with cortical bone expansion extending into the maxillary antrum and displacing the medial wall of the nasal cavity.

Histological analysis confirmed this lesion as a conventional ameloblastoma. This case is unusual because this subtype of ameloblastoma more commonly presents as a multilocular radiolucency.

CASE PRESENTATION: PRESENTING COMPLAINT AND HISTORY OF PRESENTING COMPLAINT

A 68-year-old male was referred to the Dental Department at Mater Dei Hospital after being referred by his general dental practitioner (GDP), for the "management of a cyst in the region of tooth 28". The patient' s presenting complaint was a "strange feeling" during lateral excursions and was otherwise asymptomatic.

MEDICAL AND DRUG HISTORY

Refer to Table 1 below.

SOCIAL HISTORY

The patient reported no smoking or alcohol drinking habits.

EXTRA-ORAL AND INTRA-ORAL EXAMINATION

On extra-oral examination no abnormalities were detected.

Past surgical history	Drugs	Dosage regimen
Hypertension	Bumetanide	4mg OD
	Doxazosin	2mg BD
	Isosorbide mononitrate	60mg OD
	Valsartan	160mg BD
Hyperlipidaemia	Rosuvastatin	5mg OD
Atrial fibrillation	Sotalol	40mg BD
	Warfarin	7.5mg OD
Chronic idiopathic thrombocytopenia	Eltrombopag	25mg OD
Gastro-oesophageal reflux disease	Omeprazole	20 mg BD
Past surgical history		
Coronary artery bypass graft in 1999		
Drug allergies		
No known drug allergies		

Table 1: Medical history and Drug history

Upon intraoral examination, there was a swelling around the left maxillary tuberosity region. The swelling was firm on palpation and the overlying mucosa was normal in appearance. No bleeding or discharge was noted.

RADIOGRAPHIC ASSESSMENT (TABLE 2)

An orthopantomogram (OPT) was taken to localise the lesion followed by a cone beam computed tomography (CBCT) to assess the extent of the lesion in 3D.

The patient was referred to the Ear, Nose and Throat (ENT) department for further investigations. A magnetic resonance imaging (MRI) of the paranasal sinuses was performed.

The radiographic findings are listed in Table 2.

DIFFERENTIAL DIAGNOSIS

Refer to Table 3 on page 12.

DIAGNOSIS AND TREATMENT

An incisional biopsy of the left maxillary sinus and the maxillary tuberosity region was performed at the ENT department. The histological findings showed characteristic features of conventional ameloblastoma.

The clinical, radiographic and histological findings led to the diagnosis of a conventional ameloblastoma. The risk and benefits of simple enucleation versus a wider local excision were explained as the treatment options available. The patient was managed by a partial maxillectomy under general anaesthesia (Fig.7). This created an oroantral and oronasal communication which were closed primarily with a buccal advancement flap (Fig. 8). During recovery a wound dehiscence developed resulting in an oronasal fistula (Fig. 9a). An acrylic dressing plate was fitted to act as an obturator (Fig. 9b) until ultimately there was spontaneous closure of the oronasal fistula (Fig. 13).

Imaging Modality	Radiographic findings
Orthopantomogram (Fig. 1)	• Heavily restored dentition • 27 restored endodontically and 28 not visible • Radiolucent lesion located in the upper left quadrant at the maxillary tuberosity region distal to tooth 27 extending apically. • Borders of the lesion are ill defined.
CBCT (Fig. 2, Fig. 3, Fig. 4)	• A unilocular isodense lesion located in the left alveolar process of the maxilla extending to the sinus cavity. It is causing perforation of the lateral sinus wall and thinning of the posterior sinus wall. (Fig 2b) • The lesion is also causing fenestration and perforation of the alveolar ridge. (Fig 2c) • Lesion is associated with the distal and palatal roots of tooth 27 without root resorption and/or displacement. (Fig. 2a) • The anterior portion of the sinus cavity is free from the lesion but it is opacified. (Fig 2b) • In the coronal view, the left nasal cavity is partially obliterated and the inferior concha is hypertrophic, but still symmetrical. (Fig. 2c) • Lesion in continuation with the major palatine canal causing resorption of the walls. (Fig. 3)
MRI (Fig. 5), (Fig. 6)	• There is an expansile unilocular measuring 3.3 x 2.7 x 5.0cm occupying the left maxillary sinus extending to the floor of the sinus and maxillary bone itself. (Fig. 5) • The lesion shows an intimate relationship with the roots of the left posterior molar. • It shows well demarcated margins with internal high T2 signal, and a solid enhancing component in its most inferior portion showing diffusion restriction. • The solid component measures 2.0 x2.1x 1.6 cm. homogeneous hypersignal area on the upper two thirds of the maxillary sinus and a heterogenous hypersignal area at the lower third of the maxillary sinus (cystic region) (Fig. 6) • A small quantity of retained secretions seen in the left posterior ethmoid air cells. (Fig. 6) • Conclusion: T1-weighted isosignal and T2- weighted hypersignal unilocular lesion arising in the left maxilla occupying the left maxillary sinus with an internal solid enhancing component.

Table 2: Radiographic findings

HISTOPATHOLOGY REPORT

The post-surgical histopathology examination of the resection specimen revealed similar histomorphological features to the incisional biopsy.

The specimen is extensively infiltrated by a conventional ameloblastoma, comprising sheets and islands of acanthomantous cells with a peripheral palisade of tall columnar cells that exhibit reverse nuclear polarity. (Fig. 11) Centrally, the tumour islands contain stellate reticulum-like areas (Fig. 10). The tumour is predominantly solid, however cystic areas are also seen. The tumour reaches the posteromedial, posterior and the superior surgical margins on the main excision specimen and involves the separately submitted posterior maxillary sinus and floor of maxillary sinus. Figure 12 show ameloblastoma infiltrating into the deep corium of the palatal mucosa and replacing bone.

OUTCOME AND FOLLOW-UP

Following surgery, the patient was admitted to hospital for observation. He was subsequently followed up bimonthly for the first 8 months post-op. After that he was reviewed every 6 months. Two years post-op, an interval MRI scan of the paranasal sinuses was performed with no evidence of local disease recurrence.

Continues on page 8.

The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

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DISCUSSION

The diagnosis of ameloblastoma is typically made through a combination of clinical examination, radiographic imaging, and histopathological analysis.

This maxillary ameloblastoma was detected at an advanced stage due to the late onset of clinical symptoms. Maxillary ameloblastomas account for approximately 20% of all ameloblastomas. Of these, 47% occur in the molar region and 15% in the maxillary sinus and the floor of the nose (1).

The majority of ameloblastomas are diagnosed in the fourth and fifth decade of life (2). Interestingly, the literature reports that maxillary ameloblastomas commonly occur twelve years later than their mandibular counterparts (1).

This is a progressively slow growing tumour and symptoms usually arise at a later stage when the tumour has invaded surrounding structures such as the maxillary sinus, nasal cavity, orbit, or, rarely, the cranial base (1,5).

This is in accordance with the present case, where the lesion was occupying almost the entire left maxillary sinus at the time of initial presentation. Assessment of the lesion with a conventional panoramic radiograph was challenging due to overlapping and distortion of structures.

In view of this, a CBCT scan of the maxillofacial region was taken for better localisation of the lesion in 3D.

Continues on page 10.

Figure 1: An orthopantomogram taken on 05/10/2020

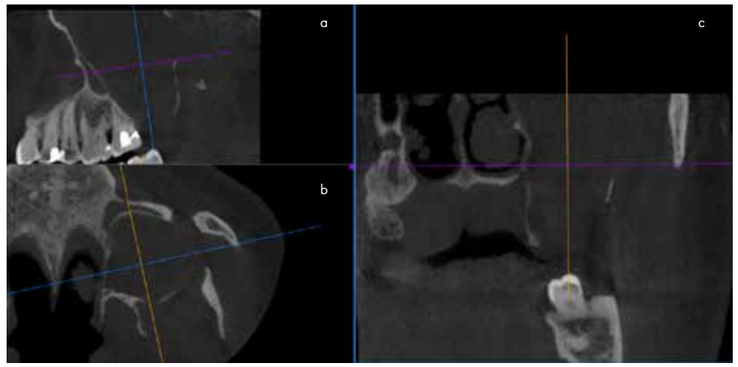

Figure 2: CBCT scan taken on 05/10/2020 showing a) sagittal b) axial c) coronal views of a unilocular lesion within the maxilla and maxillary antrum

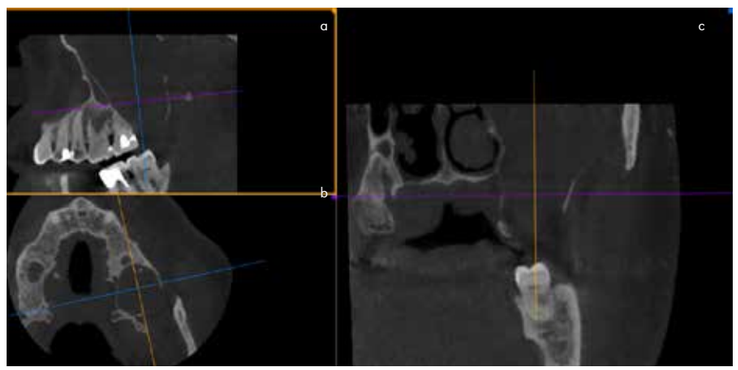

Figure 3: CBCT scan taken on 05/10/2020 showing a) sagittal b) axial c) coronal views of a unilocular lesion within the maxilla and maxillary antrum causing fenestration of the major palatine canal wall

The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

Continues from page 8.

This provided a clearer picture, showing the full extent of the lesion with well-defined borders, homogeneous content and effect on adjacent structures. Ameloblastoma on computed tomography (CT) appears as hypodense in cystic areas and isodense in solid regions. (6). In this case, the lesion was predominantly isodense indicating that it was solid in nature. Ameloblastoma can be classified according to its appearance; multilocular (resembling "soap bubbles" or "honeycomb" appearance), unilocular, peripheral (extra-osseous) or desmoplastic (mixed radiopacity) (7).

The differential diagnoses upon presentation (Table 3) lists the following; ameloblastoma, OKC, radicular cyst and dentigerous cyst. A radicular cyst could have arisen from the non-vital upper left seven. A dentigerous cyst was highly unlikely as no unerupted tooth could be identified on the OPT.

The lesion was highly suspicious for ameloblastoma and OKC due to the presence of cortical expansion, which has been documented in 89-100% of cases of ameloblastoma (8) and 26-82% for OKC (8). Subsequent analysis in 3D excluded a dentigerous tooth due to the absence of an unerupted tooth. Radicular cyst was excluded as the margin of the lesion was not continuous with the periodontal ligament space of tooth 27. This narrowed down the differential diagnosis to ameloblastoma and OKC.

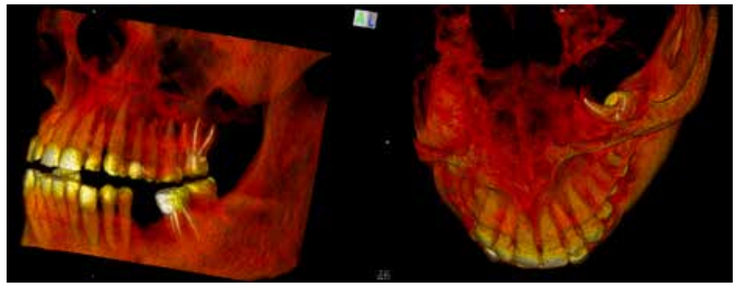

Figure 4: 3D CBCT reconstruction taken on 05/10/2020

The final diagnostic modality was an MRI scan of the maxillofacial region which excluded OKC as it failed to show characteristics typical of protein content (Table 4). On T2-weighted images (WI), ameloblastoma typically appears as a group of multiple hypersignal (bright) intensities on a high-signal-intensity background. In contrast, unilocular cystic-type ameloblastoma tends to appear as a homogeneously hypersignal area on T2WI (9). The latter can be observed in the present case. Therefore, the solid component seen on T1WI and T2WI was considered an important factor for differentiating the lesion.

However, the cyst-like signal intensities made it difficult to distinguish the lesion from other cystic lesions. Hisatomi et al (9) found that contrast-enhanced MRI (CE-MRI) and dynamic contrast-enhanced MRI (DCE- MRI) could provide additional information for differentiating unilocular cystic-type ameloblastoma from other conditions (9).

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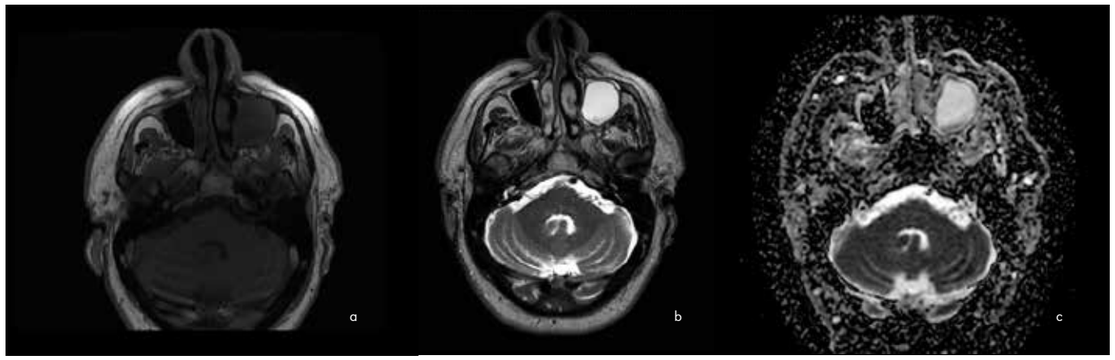

Figure 5: Magnetic resonance imaging taken on 07/12/2020 showing axial views a) Isosignal on T1-weighted b) Hypersignal on T2-weighted c) Heterogeneous hypersignal on ADC

The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

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The MRI features of this lesion are consistent with those of a unilocular cystic-type ameloblastoma. The apparent diffusion coefficient (ADC) is another factor that can be helpful in making a diagnosis. According to some studies, ameloblastoma is characterised by a high ADC value, which may indicate a high level of free water and a low level of cellular components (10). However, in this case, the ADC value was not obtained.

This case highlights the importance of advance imaging modalities including CBCT and MRI to narrow down the differential diagnosis and help guide the surgical treatment plan. While

3D imaging is now considered standard, individual imaging features of ameloblastoma are not independently sufficient for a definitive diagnosis (11). Histopathological analysis remains the gold standard to confirm the diagnosis and identify the subtype of the lesion (11).

According to the 2017 WHO classification, ameloblastoma is divided into four main types. These are conventional ameloblastoma, unicystic ameloblastoma, peripheral ameloblastoma, and metastasing ameloblastoma (2).

It is important to note that ameloblastoma is further classified into several subtypes based on their cellular and architectural features (Fig. 14). Within the category of conventional ameloblastoma, there are several histological subtypes. These include follicular, plexiform, acanthomatous, granular, basaloid,

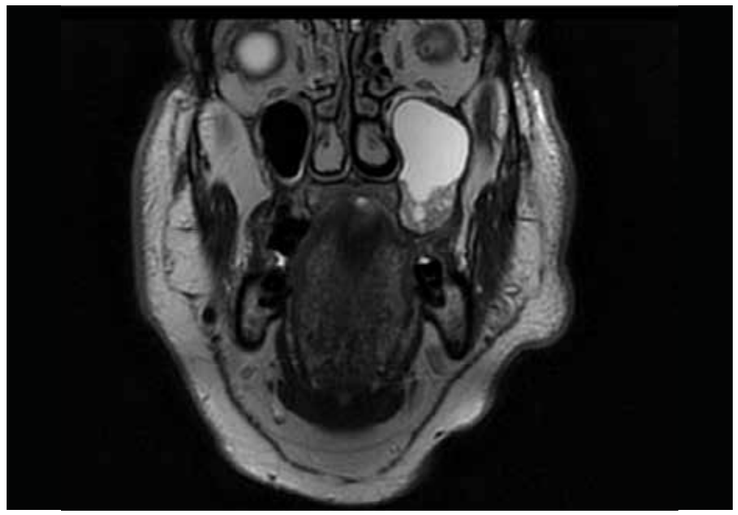

Figure 6: Coronal T2-weighted Magnetic resonance imaging taken on 07/12/2020 showing heterogenous hypersignal area at the lower third of the maxillary sinus (cystic region) and homogeneous hypersignal area on the upper two thirds of the maxillary sinus (solid component)

Differential diagnosis at initial presentation	Diagnosis after 3D imaging
Ameloblastoma	Ameloblastoma of unknown subtype
OKC	
Radicular cyst	
Dentigerous cyst	

Table 3: Differential diagnosis

and desmoplastic. The follicular (32.5%) and plexiform (28.2%) patterns are the most common (12,13).

While the acanthomatous (12.1%) subtype is rare and tends to present more commonly in an older population. It is also more frequently found in the mandible (81%) than in the maxilla (19%) (14).

As seen in this present case, admixed histopathological types can be found in an ameloblastoma (14,2). This lesion was diagnosed as a conventional ameloblastoma showing histopathological features of both follicular and acanthomatous ameloblastoma.

Follicular ameloblastoma resembles the epithelial component of the enamel organ within a fibrous stroma whilst an acanthomatous ameloblastoma includes squamous metaplasia, and variable keratinisation of stellate reticulum-like cells in the central part of the tumour (2).

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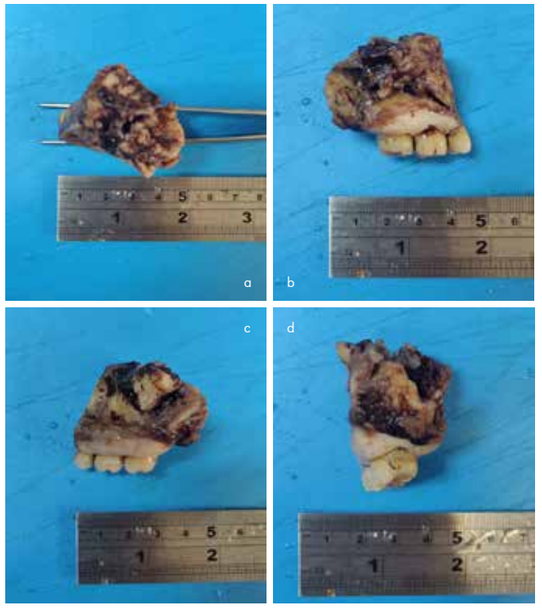

Figure 7: The partially resected maxilla in a) superior b) palatal c) buccal d) distal views

Figure 8: Post-op wound closure with sutures taken on 22/03/21

Figure 9: a) Wound healing b) Acrylic dressing plate taken on 30/04/21

The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

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This type of tumour may be mistaken for squamous cell carcinoma or a squamous odontogenic tumour (14). In this resection specimen no areas of squamous metaplasia and keratinisation are seen, however the presence of acanthomatous stratified columnar epithelium still warrants the diagnosis of acanthomatous ameloblastoma, even though the other typical features are not present. Moreover, these histological patterns have little clinical significance on the tumour's behaviour or prognosis (5).

The significance of the WHO (2017) classification of ameloblastoma lies in the fact that it allows for different treatment options for each subtype (conventional vs unicystic), therefore, a proper pre-operative diagnosis is essential (15).

A literature review found some studies that tried to identify radiological features of certain histological subtypes. In fact, Krishnapillai et al (16) found that follicular and acanthomatous ameloblastoma present predominantly as a multilocular radiolucency, while unicystic ameloblastoma commonly presents as a unilocular radiolucency (6).

Interestingly, on the contrary to the above, this case describes a conventional ameloblastoma presenting as a unilocular radiolucency. Several modalities have been proposed in the management of ameloblastoma, including wide local excision, enucleation and curettage, cryotherapy, cautery, laser usage, radiotherapy and chemotherapy (1).

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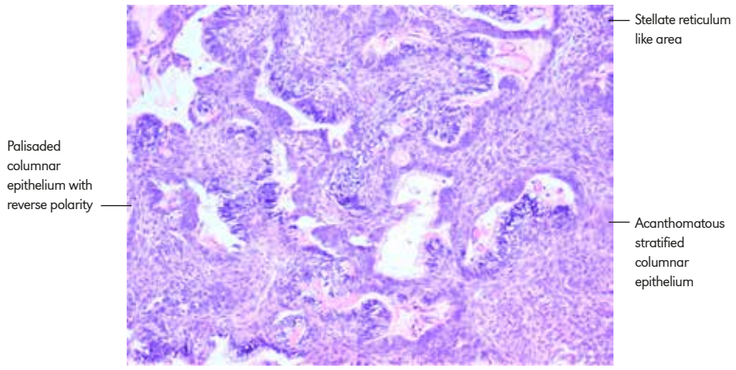

Figure 10: Photomicrograph (x100 magnification) showing the histopathological features of follicular and acanthomatous ameloblastoma, that is islands of acanthomantous cells with a peripheral palisade of tall columnar cells which exhibit reverse nuclear polarity, surrounding stellate reticulum like areas. H&E stain

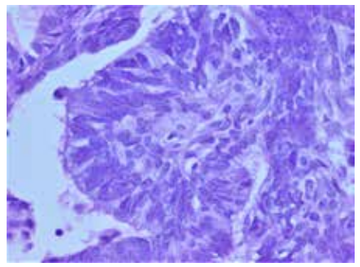

Figure 11: Photomicrograph (x400 magnification) showing palisaded columnar epithelium with reverse polarity characteristic of ameloblastoma. (black arrows). H&E stain

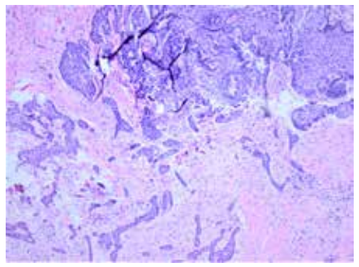

Figure 12: Photomicrograph (x40 magnification) showing tumour islands infiltrating into the deep corium of the palatal mucosa. H&E. stain

Figure 13: Follow-up visit 7 months post-op showing complete wound closure (15/10/21)

The Importance of Radiographic and Histopathological analysis of a Maxillary Conventional Ameloblastoma

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A study dated back to 1995 reported that ameloblastomas which appear as unilocular lesions radiographically may be treated conservatively such as enucleation and curettage, as long as the entire cystic lumen can be accessed operatively (7). However, the decision of an effective surgical method can be a challenge that clinicians should consider carefully to avoid recurrences (15).

Conservation treatment is the treatment of choice for a unicystic ameloblastoma.

However, a conventional ameloblastoma has an aggressive behaviour and a higher recurrence rate with conservative treatment (up to 90%) (11).

For this reason, a radical surgical approach is typically preferred for the management of conventional ameloblastoma. In fact, the WHO suggests 25 years follow up for all conventional ameloblastomas, but lifelong follow-up should be considered (2).

CONCLUSION

This case emphasises the need for the dental professional to diligently assess an OPT, as certain pathological changes may not be instantly apparent.

Modern radiographic modalities are very helpful in narrowing down the differential diagnosis and assessment of the extent of the lesion and effect on adjacent structures that will ultimately affect the treatment planning.

MRI	OKC	Ameloblastoma
T1WI	Heterogenous intermediate- to high signal intensity.	Homogenous intermediate signal intensity
T2WI	Heterogenous low-to-high signal intensity	Homogenous bright-high signal intensity

Table 4: MRI signal intensity difference between OKC and ameloblastoma (13)

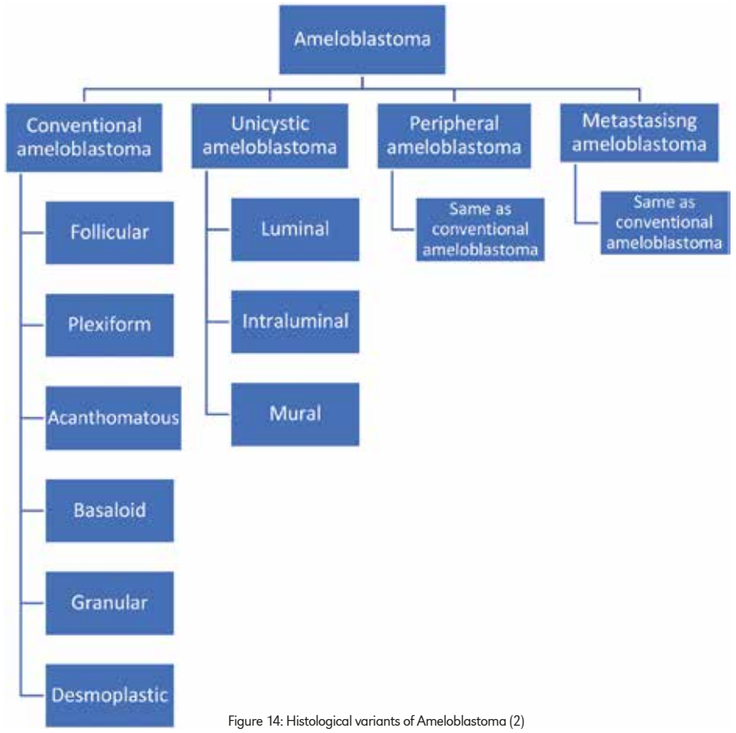

Figure 14: Histological variants of Ameloblastoma (2)

Although, certain radiographic features are characteristic for certain pathologies, histological correlation is essential for definitive diagnosis.

In conclusion, both radiographic and histopathological evaluations play crucial roles in the diagnosis, management and prognosis of conventional ameloblastoma.

Ultimately, a correct diagnosis and classification of ameloblastoma, is important as this poses a significant therapeutic challenge during surgical treatment planning. Further reporting of such unusual cases of ameloblastoma may help to identify certain characteristic features of the subtypes of ameloblastoma.

PATIENT'S CONSENT

The patient discussed in the case was under the care of Mater Dei Hospital Dental Surgery department together with the ENT department. Written informed consent was obtained from the patient for the participation in the research study. This can be made available upon request.

ACKNOWLEDGMENTS

First and foremost, I would like to express my sincere gratitude towards my supervisor

Professor Arthur Rodriguez Gonzalez Cortes for his help throughout the case report.

Special thanks to Mater Dei Dental Surgery department who made this case possible with their remarkable work. My special thanks are also extended to Mr. Clarence Pace, Mr. Timothy Vella Briffa and Dr. Christopher Zerafa who guided me in closely following up the patient.

Thank you also to Dr. Alexandra Betts and Dr. Rebecca Schembri Higgans in interpreting the histopathology report. Ultimately, this study would not have been possible without the patient who have consented. Thank you!

My final thanks goes to all my family and my friends who gave me the encouragement I needed throughout the whole case report.

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PLASMA CELL MUCOSITIS OF THE ORAL CAVITY

Oral Medicine, Surgery, Pathology and Radiology Case Report

Author: Amy Casha, Master of Dental Surgery – Year V
Supervisor: Mr Nicolas Bezzina

ABSTRACT

Plasma cell mucositis (PCM) is a benign plasma cell proliferative disorder of the mucous membranes with an unknown aetiology." PCM is the term used for disease which involves the upper aerodigestive tract and the oral cavity. Adult patients are usually affected with an average age of presentation of 56.6 years and a minor male predominance of 1:2.1 (2).

In this case report, a 38-year-old female presented to the Oral Surgery Department at Mater Dei Hospital following referral by her dermatologist. Patient complaining of discomfort, had been in pain for the past 4 months and reported a burning sensation in her mouth. Intra-oral examination revealed erythematous shallow ulcers present on the buccal mucosa of the upper lip, poor oral hygiene and inflammation. An incisional biopsy was performed and the histopathology result concluded that the overall findings are those of plasma cell mucositis.

KEYWORDS

Plasma Cell Mucositis, Steroids, Plasma Cells

INTRODUCTION

"Plasma cell mucositis (PCM) is a benign inflammatory plasma cell proliferative disorder of the mucous membranes with an unknown aetiology."

PCM is the term used for disease which involves the upper aerodigestive tract and the oral cavity (2). Unfortunately, literature on this condition is very limited. The purpose of this report is to present a case of a 38-year-old female diagnosed with PCM. It will also highlight clinical and pathological features of this condition, differential diagnoses and recommended treatment for PCM.

CASE PRESENTATION

A 38-year-old female presented to the Oral Surgery Department at Mater Dei Hospital following referral by her dermatologist. Patient complaining of discomfort, had been in pain for the past 4 months and reported a burning sensation in her mouth. She was not performing oral hygiene because of the pain. The patient had suffered recurrent episodes of these symptoms in the past. Patient complained of 'lesions' present for approximately 1 month on her upper and lower lips, palate and tongue prior to her visit. Patient was a non-smoker and non-alcohol user.

Drug history (taken occasionally when needed and prescribed by her dermatologist):

Figure 1 (above): Clinical photo showing erythematous shallow ulcers present on the buccal mucosa of the upper lip (taken on her visit to the department).

Figure 2 (right): Clinical photo showing a shallow ulcer present on the buccal mucosa of the upper lip (taken on her visit to the dental department)

- Hydroxychloroquine (200mg BD)
- Solupred (5mg OD)
- Prednisolone (10mg OD, 5mg if taken with Solupred)

Patient is currently being investigated for Systemic Lupus Erythematosus and she is still awaiting test results.

The clinical examination was initiated by an extra-oral examination. No abnormalities were detected upon examination and palpation.

Intra-oral examination revealed erythematous shallow ulcers present on the buccal mucosa of the upper lip (Figures.1 & 2). Each ulcer was approximately 5-6mm in diameter.

The border of each ulcer was ill-defined and a smooth surface was noted. Poor oral hygiene and gingival inflammation were observed as well. The oral condition present at the time of visit was much less aggressive than the condition shown by the patient photos taken 4 months prior to her visit.

For the patient's oral presentation, the following differential diagnoses were considered:

- Systemic lupus erythematosus
- Recurrent aphthous stomatitis
- Secondary syphilis
- Fungal infection
- Lichen planus

TREATMENT AND INVESTIGATIONS

Oral hygiene instructions and periodontal therapy as needed. Prescription of 0.2% Chlorhexidine mouthwash and 0.15% Benzydamine hydrochloride mouthwash.

An incisional biopsy was taken from the upper lip.

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Specimen A was placed in formalin (for routine histology) and Specimen B in saline (for direct immunofluorescence), followed by a review of the histopathology report.

HISTOPATHOLOGY REPORT

Sections of the specimen showed a dense, band-like infiltrate in the upper corium comprised almost exclusively of plasma cells, which scattered admixed lymphocytes and rare histiocytes.

Immunohistochemistry with CD138 confirmed a dense plasma cell infiltrate.

Direct immunofluorescence failed to reveal deposition of IgG, IgA, IgM or of C3.

A negative PAS stain for fungal hyphae ruled out fungal infection.

DEFINITIVE DIAGNOSIS

The histology result concluded that the overall findings are those of plasma cell cheilitis (cheilitis indicating mucosa of the lip, since biopsy was taken from the lip).

FOLLOW-UP

The histology result was given and explained to the patient. Emphasis on her oral hygiene was made. Patient was advised to use Chlorhexidine mouthwash 0.2% for a maximum of 2 weeks and Benzydamine hydrochloride 0.15% every 3 hours whenever needed. Patient advised to take the medication, as prescribed by her dermatologist, only when required during flare-ups, at which time a soft toothbrush may be used to perform oral hygiene.

Figure 3: Ulcer on the buccal mucosa of the lower lip (photo taken by patient before her visit to the department).

Figure 4: Ulcer at the junction

DISCUSSION

"Plasma cell mucositis (PCM), also termed oral papillary plasmacytosis is a rare benign polyclonal plasma cell proliferative condition of the mucous membranes with an unknown aetiology."

PCM is the term used for disease which involves the upper aerodigestive tract and the oral cavity. Adult patients are usually affected with an average age of presentation of 56.6 years and a minor male predominance of 1:2.1 (2).

Despite the unknown aetiology, it is understood to be the result of a hypersensitivity reaction to an allergen (3).

A history of immunologically mediated or autoimmune disease has been related to this disorder (1, 15). This condition involving plasma-cell infiltrate was first described by Zoon in 1952. Plasma-cell infiltrates have been detected on the nasal aperture, buccal mucosa, larynx, palate, lips, gingiva, tongue, epiglottis and other orofacial surfaces. A 2014 case reported PCM located at the lateral commissure of the lip.

This condition has been described by a whole variety of terms, including idiopathic gingivostomatitis, allergic gingivostomatitis and atypical gingivostomatitis. Since then, the terms used to represent benign plasmocytic lesions of the aerodigestive tract are plasma cell mucositis, plasma-cell orofacial mucositis and mucous membrane plasmacytosis (7, 12).

Figure 5: Purpuric rash on legs (photo taken by patient before her visit to the department).

Figure 6: Ulcer located at the tip of the tongue (photo taken by patient before her visit to the department).

The usual clinical presentation is that of a very erythematous mucosa with nodular, cobblestone, papillomatous or velvety surface alterations. Wart-like presentations have also been described for certain cases (7).

Dysphagia, oral pain, pharyngitis and hoarseness are some of the commonest symptoms when occurring in areas such as the larynx, palate, buccal mucosa, trachea and pharynx (1).

Other studies have also reported cases with multiple ulcers (4). Various morphologies and symptoms may present depending on the location of the aerodigestive tract which is affected.

It usually involves oral, genital mucosa or the upper airway and appears as soft tissue lesions. For instance, when affecting the gingiva and lips, patients typically note swollen, sore lips and gingiva (7), which was in fact noted in this case as well.

Despite this, some unusual clinical presentations of PCM have also been reported (10).

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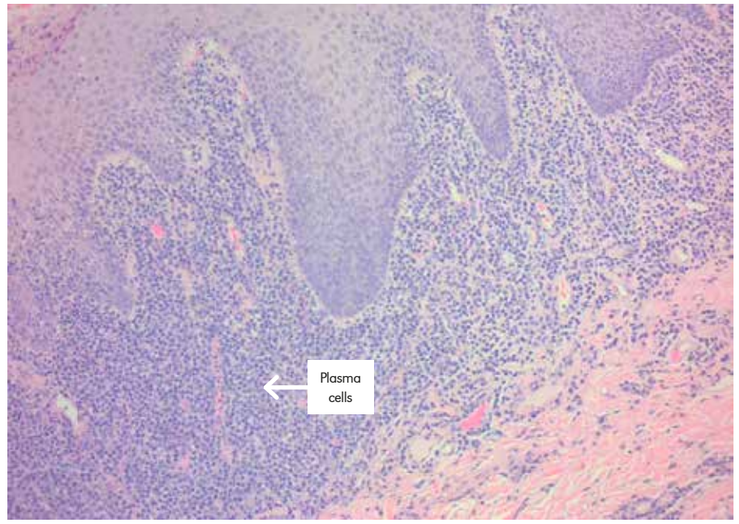

Figure 7: Low power view showing a dense band-like of plasma cells in superficial corium (H&E stain = original magnification x100).

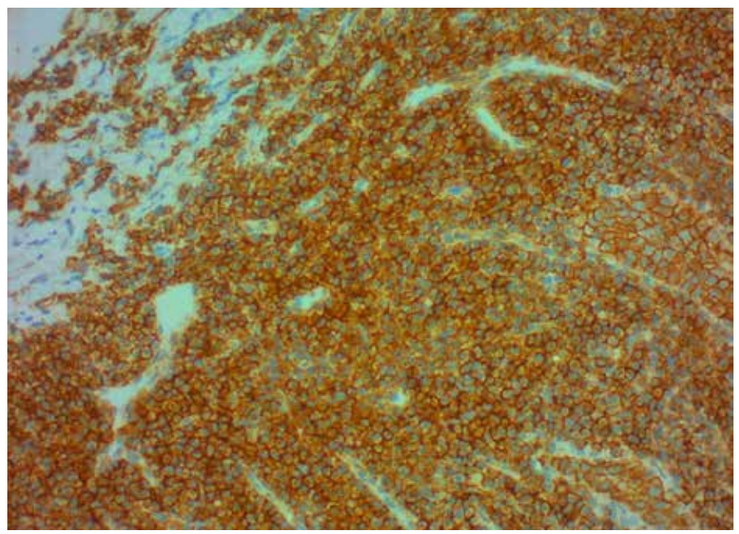

Figure 8: Immunostain showing extensive expression of CD138 confirming that the infiltrate is composed solely of plasma cells.

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As many common benign and malignant disorders of the oral cavity have the clinical and histological characteristics of PCM, it is a diagnosis of exclusion needing investigations and a multidisciplinary approach.

As described in a study published in 2007, lip tissue which had been excised showed papillary fibroepithelial hyperplasia with a dense infiltrate of plasma cells, supra-papillary epithelial atrophy and irregular acanthosis detected in the superficial connective tissue (6).

In another report, most of the lesions have been characterised as showing an acanthotic epidermis with elongated and narrow rete ridges, a thick subepithelial cellular infiltrate consisting of mature and large plasma cells, spongiosis and some lymphocytes and leukocytes (7).

Several other conditions may mimic the presentation of PCM. Certain fungal infections which present similarly to PCM are usually differentiated histologically by the absence of fungal hyphae or a lack of improvement following treatment with anti-fungal medication. A third of secondary syphilis patients have lesions on their mucous membranes.

The latter may be ruled out with a negative serologic test and lack of spirochetes on a silver stain. Lichen planus is usually ruled out because of a typical white plaque presentation and no significant histological accumulation of plasma cells (7).

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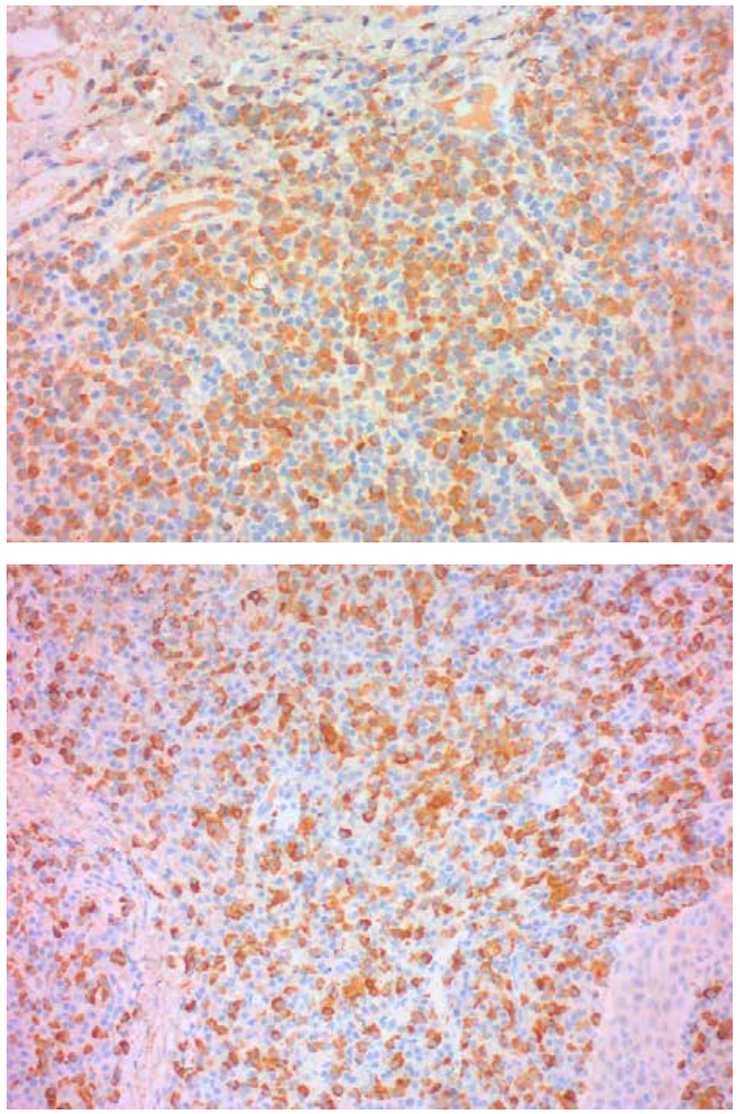

Figure 9: Kappa (a) and lambda (b) immunostains showing a non-clonal plasma cell infiltrate (H&E stain = original magnification x200).

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Continues from page 26.

Even though systemic lupus erythematosus (SLE) is not a confirmed diagnosis for this patient, the oral manifestations are very similar and it is very possible for PCM and SLE to co-exist. SLE is a chronic autoimmune disease which usually presents with times of crisis and remission of symptoms.

Not all cases may present with oral manifestations but if they do, the typical presentation is irregular, erythematous, atrophic or ulcerated oral lesions which are asymmetrically distributed. Dysphagia, candidiasis and xerostomia are amongst other oral manifestations (14).

PCM patients typically have a prior history of an autoimmune or immunologically mediated illness, however these conditions are not always present and no one condition is reliably linked to PCM (1, 15).

The majority of PCM's management is symptomatic, and numerous therapeutic approaches have mostly failed. Systemic, intralesional, and topical corticosteroids have been attempted with varying degrees of efficacy and most frequently inconsistent results.

Ferrerio et al. have reported two cases treated with antibiotics with an ineffective result (8). This condition requires long term follow-up and new strategies using different treatment modalities (4, 11).

A study carried out on 13 plasma cell cheilitis (PCC) patients in South Korea showed that most of the patients were given local therapy, for instance using intralesional steroid injections. Out of these 13 subjects, PCC fully resolved in 3 (23.1%), partially resolved in 5 (38.5%) and recurred in 5 patients (38.5%) (5).

One has to keep in mind the various side-effects commonly associated with corticosteroids. Apart from local effects such as mucosal thinning, steroids have various systemic effects such as immunosuppression and osteoporosis (9).

Taking these effects into consideration, one should think about 'minimizing steroid exposure' if response to treatment is evident. The use of steroid sparing drugs such as methotrexate or azathioprine, offers patients a better long-term outcome.

While steroid sparing drugs have a unique set of possible side-effects, with careful monitoring and dosage titration, these may be reduced. In the end, these individuals are given a far better long-term prognosis without the side effects of prolonged corticosteroid therapy (17).

CONCLUSION

Plasma cell mucositis is a diagnosis of exclusion, mainly distinguished by a distinct plasma-cell infiltrate histologically. The majority of PCM patients have a history of an autoimmune or immunological mediated condition.

The management of PCM is mostly targeted to relieve symptoms and stabilize the disease, not to cure it. The benign condition is said to have favourable prognosis, unless it affects the tracheobronchial structures.

However, PCM significantly impacts a patient's quality of life. The ideal treatment for PCM is still unknown with various inconsistent results from clinical trials. This indicates that further research is required on the correlation between PCM and treatment.

Due to different body areas affected, PCM requires a multi-disciplinary approach between specialists in many disciplines to manage this condition with the best possible manner and to prevent inappropriate treatment. Documentation of this case will increase awareness of PCM and encourage others to report similar cases.

PATIENT'S CONSENT

The patient described in this case report was under the case of the Oral Surgery Department at Mater Dei Hospital. The patient verbally consented to the examination, allowed clinical photographs to be taken and used for the purpose of this report.

The standard consent form, which is required by patients presenting at the University Teaching Clinic, was signed by the patient.

ACKNOWLEDGEMENTS

I would like to express my gratitude to Mr.Nicolas Bezzina, Dr.Maria Luisa Gainza, Dr.Alexandra Betts and Prof.George Camilleri. Words cannot express my gratitude to the patient for her consent to report the case.

I am also very grateful towards the Oral Surgery Department at Mater Dei Hospital for their help in following up the patient discussed in this case report.

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THE FEDCAR SPRING MEETING

MADRID, 5TH MAY 2022

Dr David Muscat BDS (LON)
Elected Dental member of the Medical Council of Malta

The first part of the meeting was essentially changing of the statute and approving the budget.

NATIONAL ISSUES FOR THE REGULATION AND FOR THE PRACTICE OF DENTISTRY IN SPAIN

Several issues were covered such as the competencies and responsibilities of technicians and hygienists.

Dental hygienists can apply fluoride,insert and remove retractor wires,polish seals,fit and remove rubber dam and remove calculus and staining. They must always work under supervision and cannot work independently.

Dental Technicians are manufacturers of prosthesis and other customised medical devices.

HEALTH ADVERTISING

Marketing must be accurate and truthful both in content and form to ensure patient safety. A National Law needs to be created to control health advertising and monitor compliance.

PROFESSIONAL SOCIETIES AND FRANCHISES

Any business engaged in the provision of dental services must be in the hands of dentists and subject to ethical principles. Chains such as Dentix and Idental are being investigated.

THE ONLINE SALE OF PRODUCTS/PROSTHESIS

Regulation prohibits the sale of prescription only health products by telematic means. Tele Medicine needs to be regulated in Europe.

HYALURONIC ACID

Infiltration of lips and cheeks is the responsibility and competence of dentists.

BOTULINUM TOXIN

Used only in chronic hyper-salivation in adults and children. However if justified ,and in the absence of other therapeutic alternatives it may also be used to treat TMJ, bruxism and grinding and oro-facial pain.

ADEE

The latest developments from ADEE on Dental Education were described.

The ADEE has a LEADER programme. They look at criteria at a National level. The school will use the information to devise a four year programme.

Year 1 – self evaluation report .a four day visit with meetings with staff,teachers and students including all centres on location.

At the end of the visit, recommendations will be made to ensure that the programme rules are abided by especially with reference to the European diploma.

Teaching and welfare criteria for students,professional development and teaching teams.and elements affecting other institutions.

Year 2 – Return to the university and gauge the reaction to the elements presented in year 1.

Year 3– another visit on site to ascertain changes.

Year 4 – check process to, ensure quality.

The ADEE would like to formulate a partnership with FEDCAR. One needs to check say the hours in each discipline as well as means, objectives and methodologies.

With ADEE schools have to volunteer to be checked. It is a 4 year process and essentially is a request for excellence. The cost is 9000 Euro over four years plus the travelling and accommodation costs of the inspectors

The work of ADEE is more involved in improvement .they propose criteria . The criteria are on-line and one may access them..

ADEE sets standards for dental graduates competencies and methodologies. This provides a degree of assurance for the regulators.Ireland has adopted ADEE competencies. ADEE is not there however to control standards as this is the remit of the competent bodies.

At this meeting Dr David Muscat volunteered to be on the working group of Fedcar with ADEE and was accepted.

LATEST EU DEVELOPMENTS

In May 2022 there was a proposal for a regulation to establish the Union Health Data Space. This will allow exchange of health data for operational and analytical use. The challenge is that by 2025 we will close the digital gap that currently exists between different states healthcare systems.

Foreseen challenges are consent, professional secrecy and MEPs' ability to compromise.

Actual challenges are tele-consultation,profiling, consent and exemptions. Clear Aligners are expected to grow by 20 % annually.

EU Medical Device Regulation- there must be no misleading ads for the patient. Online selling authorised to HCPs or patients.

Domestic Law – exercise of a medical profession is not superseded by EU MDR. Online selling cannot supersede this natural regulation of the exercise. Under the EU MDR, the member state may on the grounds of protection of public health ,require a provider of information of information society services.

EUDAMED

In 2026 this will be mandatory . it is a databank where all medical devices on the internal market will be registered. This is vigilance information. If there is a problem with the medical device it is communicated to the register. The seller will be obliged to report it.

RAPEX

This is a safety gate of vigilance form I.a. Cosmetic products. Legal obligation from 2026 and there will be an obligation to withdraw unsafe/non compliant products.

THE IMI AND ALERT MECHANISM

The Alert mechanism is under used in the EU. 12 out of 27 states use it according to figures provided by the European Commission and presented at the meeting. Around 200 alerts were exchanged-in 2022 between these states . in comparison, around 20,000 were exchanged for the nursing profession or 10,000 fort eh Medical Profession between 2016 and 2019.

The EU is preparing a report on the direction of the implementation of the EU Directive . It seems that the Alert mechanism is not being used by all countries as they showed that only half of them have used it. There is no obligation to use the Alert Mechanism. The Directive encourages you to use the mechanism . The Alert Mechanism works only through IMI.

UKRAINIAN REFUGEES

These may be looked at under the General system. With the help of National Regulators: setting up, training courses to prepare the professional to integrate into the healthcare system.

FEDCAR DECLARATION ON THIRD COUNTRY PROFESSIONAL COMPETENCIES AND QUALIFICATONS

This was adopted at this meeting. There is a minimum requirement that is mandatory, not only to meet the criteria for obtaining the European

Blue card for third country nationals but to guarantee confidence in the oral health competence of the practitioner and to maintain confidence in the free movement of professionals across Europe.

Dental Qualifications obtained outside the EU must at a strict minimum correspond to the applicable EU requirements (Directive 2005/36 EC),and some prudent countries applying measures going beyond this minimum standard. In addition to the theoretical examination (written, oral) and practical examination that FEDCAR recommends as a basic standard ,some countries consider it a need to also add some induction period or compensation measures.

Addressing labour shortages in the EU must NEVER compromise patient safety.

DAM LECTURE ON

Endodontic Irrigants

A DAM lecture on Endodontic Irrigants by Dr Maria Xuereb and kindly sponsored by Jesmond Mizzi Financial Company was held at The Prince of Wales Band Club in Birgu followed by dinner at Del Borgo .It was an excellent event and fully subscribed .

GUIDELINES FOR THE VAT TREATMENT OF HEALTH CARE SERVICES

Tax and Customs Administration, Malta

PURPOSE AND BACKGROUND

The purpose of this document is for the Commissioner for Tax and Customs ('CfTC') to provide guidance, in conformity with article 75(2) of the VAT Act (Chapter 406, Laws of Malta), on the application of the VAT exemptions contained under sub-items (1) and (2) of item 11 of Part Two of the Fifth Schedule to the VAT Act based on the provisions of the EU VAT Directive (2006/112/EC)[1] and jurisprudence of the Court of Justice of the European Union[2] applicable at the time of issuance this Guideline.

The VAT exemption contained under the first sub-item (item 11(1)) applies to the supply of medical care by a person in the exercise of any profession regulated by the Health Care Professions Act (Chapter 464, Laws of Malta) or the Psychology Act (Chapter 471, Laws of Malta).

The VAT exemption contained under the second sub-item (item 11(2)) applies to the supply of care or medical or surgical treatment in any government hospital or institution or in any other hospital or institution approved by the Minister for the purpose of said exemption.

INTERPRETATION

ITEM 11(1) – MEDICAL CARE SUPPLIED BY PROFESSIONALS

For this exemption to be applied, two conditions must be **cumulatively** satisfied:

1. The supply must be a supply of "medical care"; and

2. The supply must be provided by a person in the exercise of any profession regulated by the Health Care Professions Act or the Psychology Act (hereinafter referred to collectively as "Health Care Professionals").

Therefore, not all supplies by Health Care Professionals automatically qualify for the VAT exemption – such supplies must also be "medical care" in order for the exemption to apply.

For the purpose of the application of this exemption, the term "medical care" shall mean any services that have as their purpose the protection (including maintaining and restoring) of human health and the diagnosis, treatment and, in so far as possible, cure of diseases or health disorders in humans.

"Health" includes the mental health of a patient.

ITEM 11(2) – CARE OR MEDICAL OR SURGICAL TREATMENT IN HOSPITALS/CLINICS

For this exemption to be applied, two conditions must be cumulatively satisfied:

1. The supply must be a supply of "care or medical or surgical treatment"; and

2. The supply must be provided by a government hospital or institution or in any other hospital or institution approved by the Minister for the purpose of this exemption.

For the purpose of the application of this exemption, the following shall apply:

I. "care or medical or surgical treatment" shall mean:

   a. "medical care" which is delivered by a "Health Care Professional"; and

Continues on page 38.

1 Article 132(1), points (b) and (c)

2 Peter d'Ambrumenil (C-307/01); L.u.p GmbH (C-106/05); PFC Clinic (C-91/12); Termas Sulfurosas (C-513/20); I GMBH (C-228/20); CIG (C-458/21); amongst others.

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Continues from page 37.

b. Shall also include any activities which are closely related and essential to the supply of such medical care. An activity is closely related and essential to the supply of medical care where, without such activities, it is not possible to achieve the objectives pursued by the related supply of medical care, i.e. to protect, diagnose, treat, and in so far as possible, cure diseases or health disorders in humans.

II. "other hospital or institution approved by the Minister" for the purpose of this exemption shall be an entity that is aligned with the legal requirements determined by the relevant competent authorities to render supplies of care or medical or surgical treatment as defined in this Guideline.

For the avoidance of doubt, any terms defined for the purpose of the exemption under item 11(1) shall be equally applicable for the purpose of applying the exemption under item 11(2).

OTHER MATTERS RELATING TO BOTH EXEMPTIONS UNDER ITEMS 11(1) AND 11(2)

1. For the avoidance of doubt, supplies not primarily for the benefit of the patient shall not be considered as supplies of medical care.

   By way of example, services cannot be regarded as supplies of medical care if they are provided by a Health Care Professional whereby such services are effected primarily in order to enable a third party to take a decision which has legal consequences for the person concerned or other persons, with any medical care implications being merely indirect.

2. Supplies of an aesthetic or cosmetic nature (i.e. supplies whose purpose is to alter, change, improve, or modify, in any way, the appearance of the human body) provided or delivered by Health Care Professionals, subject to the other applicable conditions as detailed within the preceding sections to this Guideline, may also qualify for an exemption without credit in so far as they qualify as supplies of "medical care".

RECORDS TO BE KEPT

In order to substantiate the application of the respective exemption on the supply of medical care, particularly for supplies of an aesthetic or cosmetic nature, the following records may be requested by the CfTC for each such supply:

a) Type of service provided;

b) Brief medical justification for exempting any supplies of an aesthetic or cosmetic nature;

c) Details and warrant number of the Health Care Professional providing the justification in (b) above;

d) Unique identification number linking the supply to a specific patient;

e) Value of the service;

f) Date(s) the service was provided.

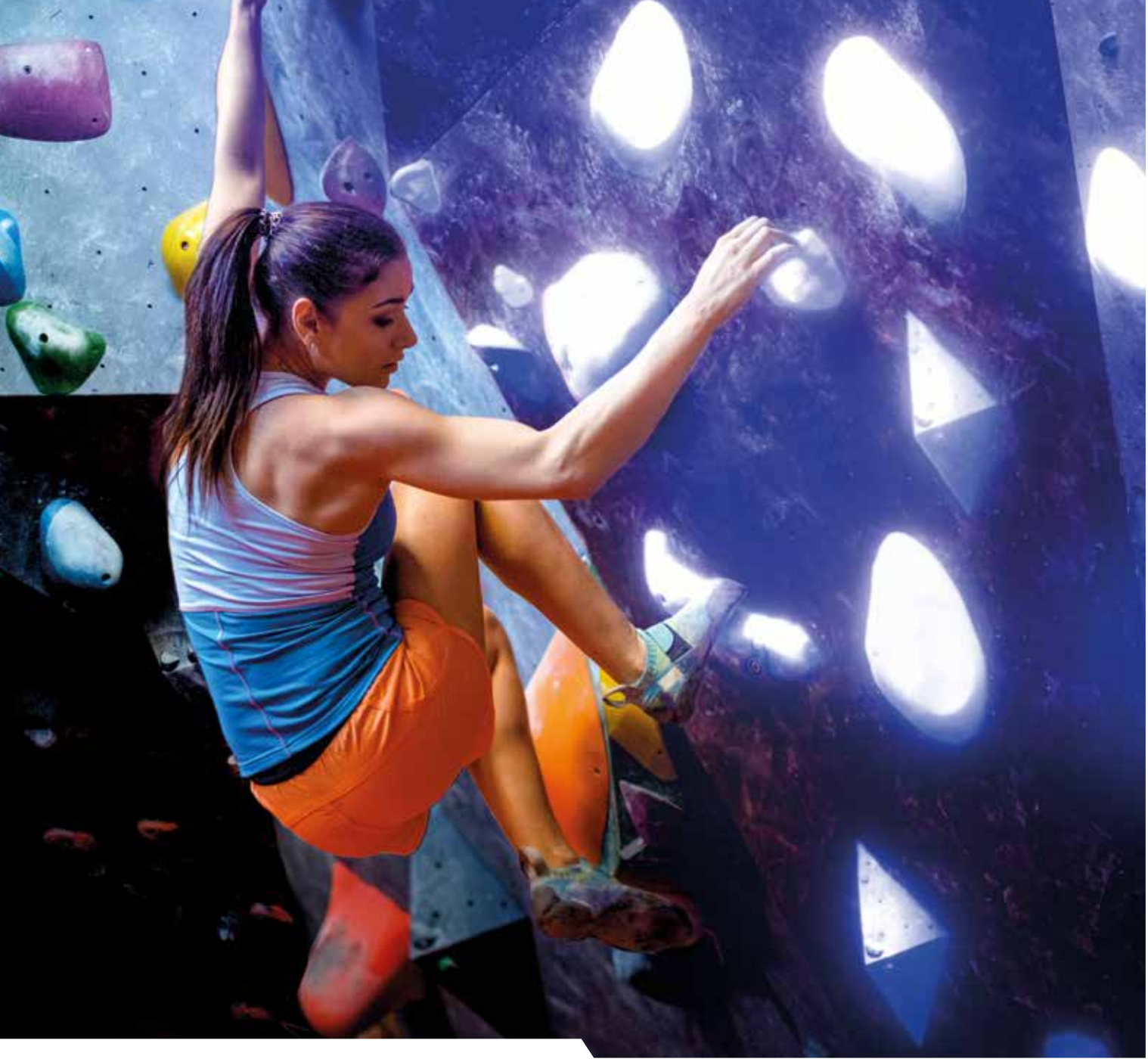
Such records may be stored electronically in any format and should be retained for a period of at least 6 years from the end of the year to which they relate.

DISCLAIMER

This Guideline shall not prejudice in any way any of the powers of the Commissioner in terms of the VAT Act.

This Guideline shall replace and supersede any previously applicable Guidelines on the same mater.

The Commissioner reserves the right to substitute, alter or withdraw these guidelines as necessary at any time.



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