

VALUE OF SIALOGRAM & ULTRASOUND IN THE DIAGNOSIS OF SWELLINGS IN THE PAROTID REGION

By

Mahmoud Abou El-Fadl; Borhamy El-Sayed Ghoneim and Lotfy Nassar

From Radiodiagnosis and Surgical Departements, Faculty of Medicine, Al-Azhar University

Abstract : This study included 20 patients with parotid swelling subjected to full clinical examination. These patients were also subjected to ultrasonographic and sialographic examination. The pathological findings confirmed the sialographic findings in 13 patients and ultrasonographic findings in 18 patients.

أهمية الأشعة بالصبغة والموجات فوق الصوتية في تشخيص أورام الغدة النكفية

د . محمود أبو الفضل - د . برهامى السيد عيسى - د . سيد غنيم - ود . لطفى نصار

أجرى هذا البحث على عشرين مريضا يعانون من ورم فى مكان الغدة النكفية . وبعد فحصهم اكلينيكيًا أجريت لهم أشعة بالصبغة على القنوات اللعابية للغدة النكفية وأشعة بالموجات فوق الصوتية على الغدة النكفية . وقد تم تشخيص (١٨) حالة بواسطة الموجات فوق الصوتية ، (١٣) مريضا بواسطة الأشعة بالصبغة على القنوات اللعابية وتبين من هذا البحث أن التصوير بالموجات الصوتية له دور هام فى تشخيص أورام الغدة النكفية بينما الأشعة بالصبغة على القنوات اللعابية لها دور هام فى تشخيص التهاب الغدة النكفية . . .

Introduction :

The parotid gland is the largest of the salivary glands. It provides a largest organ for inflammatory, immunologic, congenital, traumatic and neoplastic disorders.

Ultrasonography and sialography are both means widely used for the diagnosis of salivary gland lesions.

Gertchen and Gooding (1980) reported that the ultrasound permits markedly improved visualization of parotid gland compared with other methods. Also, the ultrasound can detect a mass lesion in the area of parotid gland and define whether it is intrinsic or extrinsic but yet has limited usefulness in determining the specificity of an abnormality.

Som et al. (1981) reported that sialogram remains the method of choice in chronic sialadenitis, autoimmune disease and granulomatous diseases.

On the other hand, the indications for sialography in neoplasms of salivary glands are controversial.

The present study was, therefore, undertaken to assess the usefulness and accuracy of sialography and ultrasonography in the diagnosis of parotid swellings.

Patients and Methods :

The present study included 20 patients with parotid swellings; 13 males and 7 females. Their

ages ranged from 40 to 55 years. All patients were subjected to full history, clinical examination and routine investigations.

Also, all of them were subjected to plain radiography to the region of parotid gland to rule out the possibility of radio-opaque sialolithiasis or affection of bone in case of malignant parotid, sialography and ultrasonography.

The 20 patients were subsequently operated upon. The surgical technique included superficial parotidectomy, excision biopsy and incision biopsy.

Histopathological examination of removed specimens was done.

The diagnostic results of sialography and ultrasonography were compared with pathological findings.



Fig. (1) : Ultrasound of mixed parotid tumour showing hypoechoic slightly inhomogeneous solid lesion with smooth outline.

Results :

The clinical presentation of the 20 patients were, 16 patients presented by painless slowly growing swelling not associated with facial nerve affection. One patient presented by painful rapidly growing swelling with involvement of facial nerve, and 3 patients presented by periodic recurrent attacks of pain and swelling.

The ultrasonographic findings denoted that 3 patients had extraparotid swelling and 17 patients had intraparotid swelling.

The operative findings confirmed the ultrasonographic findings denoting that the accuracy of ultrasonography in differentiation between extraparotid and intraparotid swelling was 100%. The sialographic examination can not detect these 3 cases of extraparotid swellings. 12 patients of the whole series were diagnosed as



Fig. (2) : Sialogram of mixed parotid tumour showing a well circumscribed filling defect and indentation in the salivary gland, & slight expansion of duct system.

pleomorphic adenoma (Mixed parotid tumour) after ultrasound examination. The pathological findings confirmed the ultrasonographic findings in all of them and confirmed the sialographic findings in 10 of 12 patients of mixed parotid tumour only.

The ultrasonographic picture of pleomorphic adenomas typically was hypoechoic slightly inhomogeneous solid lesion, with a smooth outline they frequently had a lobulated contour.

A mixed tumour was characterized sialographically by a well circumscribed filling defect or indentation in the salivary gland with leakage of contrast medium into parenchyma or the neoplasm.

One of the 20 patients was diagnosed as adenolymphoma (Warthin tumour) after ultrasonographic examination, the pathological findings confirmed the ultrasonographic findings in this patient. The pathological diagnosis of the patient with adenolymphoma was not detected after sialographic examination. The ultrasonographic picture of the adenolymphoma was strikingly hypoechoic cystic lesion.

One of 20 patients was diagnosed as carcinoma of the parotid gland after ultrasonographic examination. Incision biopsy was done and the pathological findings confirmed the ultrasonographic findings in this patient.

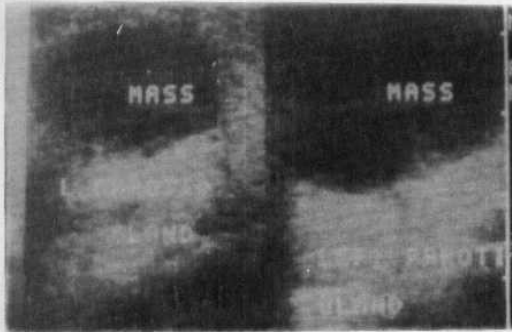


Fig. (3): Ultrasound of adenolymphoma showing hypoechoic cystic lesion.

The pathological diagnosis of the patient with malignant parotid was not detected after sialographic examination. The ultrasonographic picture of the malignant parotid was a hypoechoic inhomogenous lesion with irregular illdefined borders.

3 of the 20 patients were diagnosed as chronic non obstructive sialadenitis of the parotid gland. After sialographic examination and the pathological findings confirmed the sialographic findings in all of them. The pathological findings confirmed the ultrasonographic findings in one of the 3 patients of chronic sialadenitis only. The sialographic picture of chronic non-obstructed sialadenitis as focal areas of peripheral ductal dilatation and scattered globular or sacular accumulation of contrast media. The ultrasonographic picture of chronic sialadenitis was more subtle in appearance, mild enlargement of the gland ocured with some coarseness in the echo-pattern.

The 12 patients of mixed parotid tumour and the patient of adenolymphoma were treated by superficial parotidectomy.

The 3 patients of extraparotid swelling were excised and subjected to histopathological examination. The histopathological diagnosis of the 3 patients were 2 patients had inflammatory lymph nodes and one has sebaceous cyst. The 3 patients of chronic sialadenitis whome were proven by histopathological examination of incision biopsy treated medically.

The patient of malignant parotid was advanced and treated by radiotherapy.

The results are summarised in the Table (1).

Table 1 : Coparison between sialographic & ultrasonographic findings in 20 patients of swelling in the parotid region.

No. of patients	Pathological diagnosis	U.S. examination		Sialographic examination	
		No. of patients	%	No. of patients	%
12	Mixed parotid tumour	12		10	
1	Adenolymphoma	1	90%	0	65%
1	Malignant	1		0	
3	Extra-parotid swelling	3		0	
3	Chronic sail adenitis.	1		3	
20		18		13	



Fig. (4): Sialogram of adenolymphoma showing just a mass displacing the parotid duct.

Discussion :

In the present study, the ultrasonographic examination of the 20 patients with parotid swelling detected that 3 swellings of extraparotid lesion denoting that the accuracy of ultrasonography in differentiation between the intraparotid and extraparotid swellings was 100%. The sialographic examination can not detect these extraparotid swellings denoting that the sialography was unuseful in detection of extraparotid lesions.

John and McGahan (1985) reported that sonography is very useful for differentiating an intraparotid neoplasm from a superficially located lesion extrinsic to the gland.

In a study done by Nieman et al. (1976) sonography correctly identified the extraparotid origin in 7 of 8 lesions.



Fig. (5): A histopathological picture of parotid carcinoma.

In a study done by McGahan et al. (1984) sialography can not identify the extraparotid swelling. The results of sialography were normal in all patients with extrinsic lesions.

In the present study, the ultrasonography identified 12 mixed parotid tumour, one adenolymphoma and one malignant parotid denoting that the accuracy of ultrasonography in detection of intraparotid tumour was 100%.

Sialography identified 10 of 12 mixed parotid and can not detect one case of adenolymphoma and malignant parotid case denoting that the accuracy of sialography in detection of intraparotid tumour was 71%.

In study done by McGahan et al. (1984) sialography detected only 75% of palpable intraparotid tumours and results were normal in all patients with extrinsic lesions. Sialographic results were false negative in all four of the non-palpable intraparotid lesion found by ultrasonography.

McGurt and McCabe (1977) reported that the sensitivity of ultrasound in detecting parotid tumours appears to approach 100%.

Som et al. (1981) reported that sonography does not visualize the entire deep parotid lobe, can not be considered a major drawback of the method because 90% of parotid tumours originate from the superficial lobe.

Also, in the present study, the sialography identified the 3 cases of chronic sialadenitis denoting that the accuracy of sialography in detection of chronic sialadenitis was 100%. The ultrasonography identified one of the 3 cases of chronic sialadenitis denoting that the accuracy of

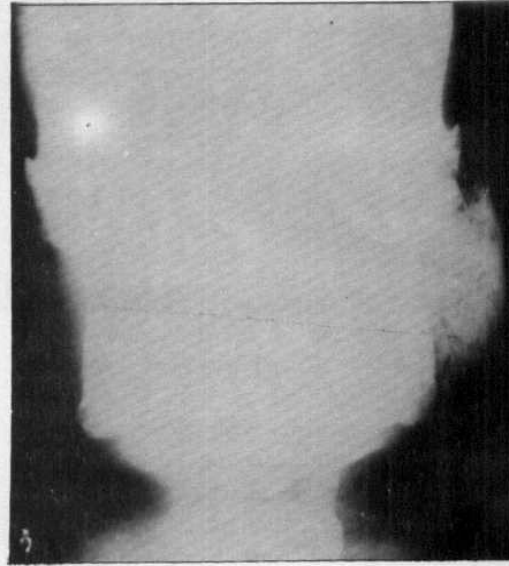


Fig. (6): Sialogram of chronic non obstructive sialadenitis of parotid gland

ultrasonography in detection of chronic sialadenitis was 33,3%.

Meine and Wolshin (1970) pointed out that sialogram of major salivary glands may detect a calculus, fistula or an inflammatory process. Their value in neoplasm is limited.

Som and Biller (1980) considered that the routine sialograms are not recommended to distinguish between malignant and benign neoplasms.

Yun and Klatt (1972) reported that sialography remains the method of choice for evaluating patients with chronic sialadenitis, autoimmune diseases and sialolithiasis. The role of sonography in these conditions is limited to ruling out a parotid neoplasm and assessing the extent of abscess formation or assessing in localization of calculi in selected patients.

Conclusion :

Sonography and sialography play helpful role in imaging mass lesions in the salivary glands and their surroundings. But ultrasonography seems to be somewhat more accurate in differentiating intraglandular from extraglandular lesions.

We consider sonography to be the method of choice for imaging the parotid tumours. Sialograph remains the method of choice for evaluating patients with chronic sialadenitis.

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