



RESEARCH ARTICLE

PREVELANCE OF PYOGENIC GRANULOMA IN PREGNANT WOMENS-A SYSTEMATIC REVIEW

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ABSTRACT

Pyogenic granuloma is one of inflammatory hyperplasias seen in the oral cavity. This lesions is unrelated to infection and in reality arises in response to various stimuli such as low grade irritation, injury, hormonal factor. Gingival changes in pregnancy were described as early as 1898, even before knowledge about hormonal changes was available Pregnancy tumor is a benign hyperplastic gingival lesion occurring during pregnancy. It is indistinguishable from pyogenic granuloma arising in non pregnant females or males 1,2.

Objective: This systematic review, analyses the prevalence of oral pyogenic granuloma in pregnant women and to determine particularly in which trimester they are common.

Materials and Methods: Articles on oral pyogenic granuloma in pregnant women published in English language were thoroughly searched in pubmed, mesh, science direct database, Manual searching was also done with preset inclusion and exclusion criteria. The characteristics like the mean prevalence frequencies of pyogenic granuloma in pregnant women were analysed.

Results: The search methodology used in this review revealed 687 publications of which 6 articles were included and the remaining 547 articles were excluded from the review. In 6 studies reviewed, the prevalence of pyogenic granuloma in pregnant females is 2.15% - 3.70% .But data in these studies were inadequate to derive the prevalence of pyogenic granuloma and the trimester of pregnancy in which they are frequent.

Conclusion: Pyogenic granuloma is seen to be more common in pregnancy next to periodontitis. The increase in hormone concentrations, exposed to local irritants favours the development of pyogenic granuloma. With increasing evidence of periodontal infection in association with pre term birth, further rigorous research is needed to determine any relation in pregnancy tumour with pre term birth.

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INTRODUCTION

The major physiology and hormonal changes occurs during pregnancy in womens life. The estrogen and progesterone in blodd levels increasedcto ratio of 100:1 in early pregnancy to nearly 1:1 ratio at term and these hormones modulates the immune systemduing pregnancy1. Pyogenic granuloma is one of the inflammatory hyperplasias seen in the oral cavity as a tissue response to irritation, trauma or hormonal imbalances. It is a common benign growth seen in the skin and oral cavity. The first case was reported in 1844 by Hullihcn and the term "pyogenic granuloma" or "granuloma pyogenicum"was coined only in 1904 by Hartzell. Hunter etal described it as bright red or magenta in color with mulberry like surface and a tendency to bleed profusely this condition may occur in up to

5percentage of pregnant women and more commonly in anterior of upper jaw usually arises in second trimester and grows rapidly after delivery it regress rapidly and may disappears entirely and regular oral hygiene maintainence have been recommended.

Aims and Objectives

Aim

To analyse the prevalence of pyogenic granuloma (pregnancy tumor) in pregnant women

Objectives

- 1. To analyses how common is oral pyogenic granuloma in pregnant women and

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- To determine whether pyogenic Granuloma more common. In particular trimester of pregnancy

Structured questions

- How common is pregnancy tumor in pregnant women
- At which trimester of pregnancy it is common

MATERIALS AND METHODS

Search strategy for identification of studies

A systematic literature search was done to identify articles describing oral pregnancy tumours in pregnant women with no time limit using the key words listed below. The search strategy was in accordance with Cochrane guidelines. The article search included only those listed in English literature. The search results were short listed using preset inclusion and exclusion criteria. The articles were screened on the basis of title and abstract. Full text was then procured for the relevant articles which fulfilled the inclusion criteria.

5a. Sources used

Online resources

- Medline, Mesh, Science direct, Google scholar.
- Manual Hand Searching

The following journals were hand searched till date,

- Journal of oral medicine and pathology.
- Oral surgery, oral medicine, oral pathology.
- Oral Diseases.
- Journal of Periodontology

Search Strategy

Pubmed search (key words)

((postpartum OR pre term labor OR peripartum OR third trimester of pregnancy OR second trimester of pregnancy OR first trimester of pregnancy OR maternal OR gestation OR gestational OR pregnant women OR pregnancy)) AND (prevalence oral mucosal lesions OR oral mucosal lesions OR oral lesions OR lesions OR alveolar mucosa OR interdental papilla OR gingiva OR oral mucosa OR mouth OR oral cavity)) AND (granulation tissue-type hemangioma OR eruptive haemangioma OR Search pregnancy gingivitis OR lobular capillary hemangioma OR pregnancy epulis OR tumor of pregnancy OR pregnancy tumor OR granuloma gravidarum OR pyogenic granuloma) Pubmed search (Mesh terms). (((("Granuloma, Pyogenic"[Mesh])) AND ("Pregnancy"[Mesh])) OR ("Pregnant Women"[Mesh])) OR ("Pregnancy Trimester, First"[Mesh])) OR ("Pregnancy Trimester, Second"[Mesh])) OR ("Pregnancy Trimester, Third"[Mesh])) OR ("Peripartum Period"[Mesh])) OR ("Postpartum Period"[Mesh])) OR ("Obstetric Labor, Premature"[Mesh])) AND (((("Mouth"[Mesh])) OR ("Gingiva"[Mesh])) Science Direct Search (Advanced expert mode) Oral pyogenic granuloma or oral pregnancy tumor in pregnancy or pregnancy epulis

Inclusion criteria and exclusion criteria

The articles were short listed based on the following inclusion and exclusion criteria.

Inclusion criteria

This systematic review includes cross sectional studies, observational and descriptive studies, prospective and retrospective cohorts, case control studies. There was no restriction imposed on the date of the published articles and articles published in English were only selected.

- Articles that reported oral mucosal lesions in pregnancy and general population
- Articles that reported oral pyogenic granuloma in pregnancy and in general population

Exclusion criteria

- Case reports and case series, letters, reviews, animal study and in-vitro studies and literature in other languages were excluded.
- Articles that did not contain information about pregnancy or pyogenic granuloma

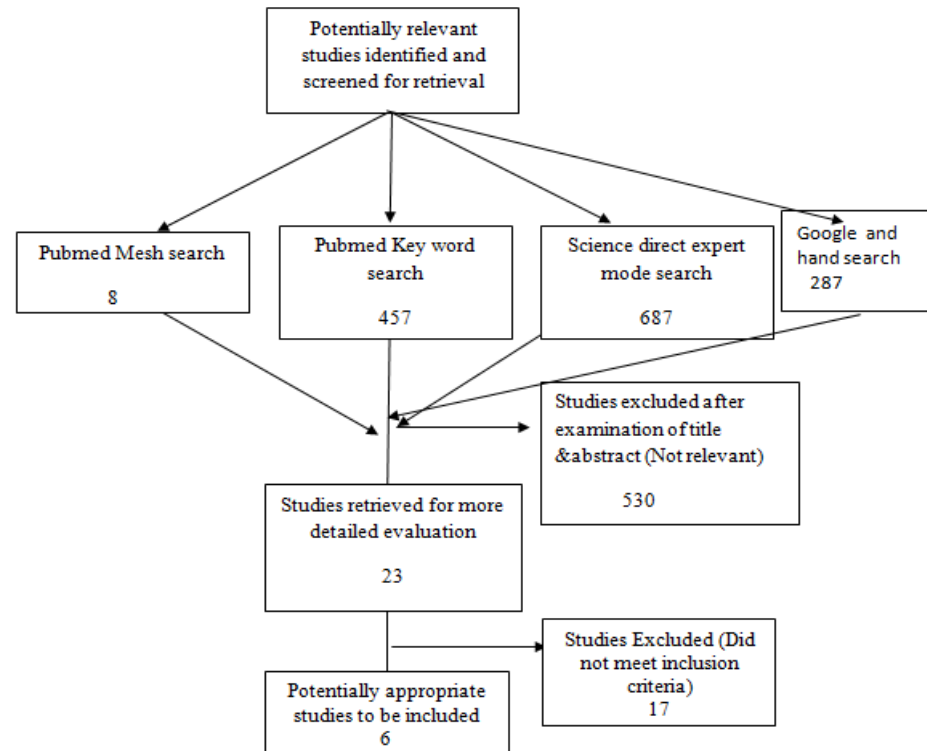
Data extraction form

A Standardized data extraction form was used to retrieve the data from the selected articles.

RESULTS

The search methodology used in this review revealed 687 publications of which 6 articles were included and the remaining 530 articles were excluded from the review. Other articles which did not have any information about prevalence of pyogenic granuloma was excluded from study. The general information of selected articles are tabulated. Of the selected 6 studies, 2 studies compared the prevalence of oral mucosal lesions between pregnant women and non pregnant women, one study was done on pregnant women patients alone and other 3 studies were done on patients who had oral pyogenic granuloma. The studies were conducted in 6 different countries Iran, Iraq, Mexico, USA, Ghana, Malaysia. In Diaz-Guzman *et al.* 2004, a prospective observational study was made of 7952 women patients were 93 of the women patients were pregnant and prevalence of pregnancy tumour among pregnant women was 2.15 % and statistically significant by $p < 0.005$. In that study pyogenic granuloma and benign migratory glossitis exhibited greater prevalence in pregnant women among all other oral mucosal lesions. In B.D.R.T. Annan *et al.* 2005, 100 pregnant and 100 non pregnant women were examined for intra orally for oral mucosal lesions, it was found there was 2.17% of prevalence of pregnancy tumor in 46 pregnant women present in 2nd trimester and there was 3.70% prevalence in 54 pregnant patients present in 3rd trimester. with overall prevalence 2.93 % prevalence in total 100 patients pregnant. In study by Hasim B.Yaacob *et al.* 1981, out of 60 pregnant women patients examined 3.3% of patients had pregnancy tumor. In study by Dr.Nabra *et al.* 2011, total 100 patients of pyogenic granuloma were examined in which 66% of females patients were pregnant and were diagnosed as pregnancy tumor. In study by James J Leyden *et al.* 1973, total 50 patients with (PG) were examined 35 patients were female and out of these 35 female patients 9 were pregnant. In study by Maryam assadat *et al.* 2008, 260 patients with localised lesions in oral tissue were examined. In 161 female patient, 4 patients had pregnancy tumor i.e 1.54 % among all localised lesions in oral cavity.

Search Flow chart



S.No.	Author & Year	Title	Journal	Country	No of Patients	Prevalence of (PG) percentage	Trimester	Evidence level
1.	Diaz-Guzman <i>et al.</i> 2004	Lesions of the oral ucosa and periodontal disease behaviour in pregnant patients	Med oral Path Oral cir Buccal 2004:9:430-7	Mexico	7952(no. of pregnant pts: 93 no ofnon pregnant pts:5537)	5% of pregnant women	Not mentioned	4
2	Hasim b yacob <i>et al.</i> 1981	The oral mucosa and pregnant women	Singapore medical journal 1981:22,354-357	Malaysia	60 patients	2 out 60 patients 3.3%	Not mentioned	4
3	James J. Leyden <i>et al.</i> 1973	Oral cavity pyogenic granuloma	Arch Dermatolvol 108,aug 1973	USA	50 patients (all with histologically confirmed oral pyogenic granuloma over period of 2 years)	9 out of 50 were pregnant women who had oral pyogenic granuloma	Not mentioned	4
4	Dr.Nabra <i>et al.</i> 2011	Oral pyogenic granuloma in ThiQar Governorate : Retrospective study	Thi- Qar medical journal;vol (5) No(1) :2011 (134- 138)	Iraq	100 cases of pyogenic granuloma during 10 years period	66 % out all pyogenic granuloma patients	2 nd and 3 rd month	2b
5	B.D.R.T Annan <i>et al.</i> 2005	Oral pathologies seen in pregnant and non pregnant women	Ghana medical journal 2005 vol 39 number 1:24-27	Ghana	100 pregnant and 100 non -pregnant women	2.17% in 2 nd trimester 3.70% in 3 rd trimmest	More prevalent In 3 rd trimester	4
6	Maryam assadathashemi pour <i>et al.</i> March 2005	A Survey of Soft Tissue Tumor-Like Lesions of Oral Cavity: A Clinico pathological Study	Iranian journal of pathology (2008)3(2)81-87	Iran	260 patients	1.4 % (4 patients out 260) (99 males)	Not Mentioned	4

Of the 6 studies from our review suggest that (PG) is one of common oral mucosal lesion during pregnancy, with prevalence of 2.15% to 3.70%. But data in these studies were inadequate to derive the prevalence of (PG) and the trimester of pregnancy in which they are frequent.

DISCUSSION

The pregnancy epulis is an entity of exaggerated response of gingiva to pregnancy in the presence of mechanical trauma and dental plaque. Clinically it appears as a red, inflamed and not uncommonly ulcerated elevated lesion of variable sizes. It bleeds readily on probing and this is due to the rich vascularity of this lesion within the connective tissue subjacent to the covering epithelium. Oral pyogenic granulomas show a striking predilection for the gingiva, which accounts for 75% of all cases. Daley *et al.* 1991 reported Pregnancy tumor for 8% of 757 epulides occurring in women of epulides, and 11% of all female patients with oral PG. In spite of good oral health care the prevalence higher, which might be attributed to hormonal changes. Some studies have shown recurrence to be between 15% and 23%, but we found it to be 3% after simple excision. Except for a higher prevalence in women and certain variations in site, our results correlated with previous reports.

Conclusion

Pyogenic Granuloma and benign migratory glossitis were the only lesions seen to be more common during pregnancy.

The increase in hormone concentrations characterizing pregnancy favours the development of PG. In pregnant women PG is one of the commonest oral mucosal lesion, hence more research in this field is required. The uniformity of distribution of the lesion in different ethnic and geographical populations compared with other reports suggests the need for further studies.

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