شبكة المعلومات الجامعية

بسم اللّه الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

بالرسالة صفحات
لم ترد بالأصل

Choroidal thickness, Macular thickness and Retinal Nerve Fiber Layer thickness by OCT in non-pregnant, pregnant and post menopausal women

Thesis
Submitted for partial Fulfillment of Master Degree in Ophthalmology
by

Nariman Fathy Mohamed
M.B.B.Ch
Ain Shams University

Prof. Dr. Sherif Zaki Mansour
Professor of Ophthalmology
Faculty of Medicine
Ain Shams University

Prof. Dr. Thanaa Helmy Mohamed
Professor of Ophthalmology
Faculty of Medicine
Ain Shams University

Dr. Hisham Samy Saad-Eldin
Lecturer of Ophthalmology
Faculty of Medicine
Ain Shams University

Faculty of Medicine
Ain Shams University
2019

CHOROIDAL THICKNESS, MACULAR THICKNESS , RETINAL NERVE FIBER LAYER THICKNESS BY OCT IN NON-PREGNANT, PREGNANT AND POST MENOPAUSAL WOMEN

Sherif Zaki, Thanaa Helmy, Hisham Samy, Nariman Fathy.

ABSTRACT

PURPOSE:

To evaluate the macular, retinal nerve fiber layer (RNFL) and choroidal thickness alterations by using spectral-domain optical coherence tomography (SD-OCT) in postmenopausal, pregnant and non-pregnant women.

PATIENTS AND METHODS:

A comparative study included a total of 42 eyes (Right eye) of 42 healthy females in the period from march 2019 to September 2019 divided into 3 groups: a) Non pregnant women, b) Pregnant women , c) Postmenopausal women.

Each subject underwent a comprehensive ophthalmologic examination. Following this detailed ophthalmologic examination, the Rs 3000 Nidek Japan OCT device was used for the assessment choroidal, macular and RNFL Thickness.

RESULTS:

The mean age of non-pregnant females was 29.64 ±3.13, mean age of pregnant females was 28.93 ±3.89 and of postmenopausal women was 53.86 ± 1.75. There was no significant difference in all macular quadrants in the 3 study groups. Choroidal thickness was statistically significant thicker in healthy pregnant females (333.36 ±44.42) than in healthy non pregnant (326.93±31.50) and significantly thinner in healthy post-menopausal women (282.64±28.04) than healthy non pregnant females. There was no significant difference in RNFL thickness between the 3 study groups.

CONCLUSION:

Oct has evolved over the past decade as one of the most important ancillary tests in ophthalmic practice. Pregnancy hormones may lead to an increase in fluid volume in many tissues of the body. There was no statistically significant difference in macular thickness and RNFL thickness between the 3 study groups. Choroidal thickness was statistically significant thicker in healthy pregnant than in healthy non pregnant and significant thinner in healthy post-menopausal women than healthy non pregnant.

KEY WORDS:

Oct – Pregnancy – Postmenopause - Choroidal Thickness – Macular thickness – RNFL Thickness.

List of Figures

List of Tables

List of Abbreviations

Abb.	*Full term*
APR	Anterior prelaminar region
BM	Bruch's membrane
CCT	Central corneal thickness
CNS	Central nervous system
CRA	Central retinal artery
CSF	Central subfield
CST	Central subfield thickness
EDI	Enhanced depth imaging
ETDRS	Early treatment diabetic retinopathy study
FAZ	Foveal avascular zone
FL	Frontal lobe
FT	Foveal thickness
G	Average
GCL	Ganglion cell layer
IIM	Inferior inner macula
IOM	Inferior outer macula
IOP	Intraocular pressure
IRM	Inferior rectusmuscle
LC	Lamina cribrosa
LR	Laminar region
MS	Maxillary sinus
N	Nasal
NFL	Nerve fiber layer
Ni	Nasal inferior
NIM	Nasal inner macula
NOM	Nasal outer macula
Ns	Nasal superior
OCT	Optical coherence tomography
ON	Optic nerve
ONH	Optic nerve head

PR	Prelaminar region
RLR	Retrolaminar region
RNFL	Retinal nerve fiber layer
RPC	Radial peripapillary capillary
RPE	Retinal pigment epithelium
SD OCT	Spectral-domain oct
SDOCT	Spectral-domain optical coherence tomography
SIM	Superior inner macula
SNFL	Superficial nerve fiber layer
SOM	Superior outer macula
SRM	Superior rectus muscle
SS OCT	Swept-source oct
TD OCT	Time-domain oct
Ti	Temporal inferior
TIM	Temporal inner macula
TMV	Total macular volume
TOM	Temporal outer macula
Ts	Temporal superior
UEM	Upper eye lid muscle

Introduction

The choroid coats the interior of the fibrous tunic of the eye. It represents the posterior portion of the uvea, the anterior being represented by a thicker region, ciliary zone. The two regions are separated by ora serrata, shaped as a scalloped line.

The macula or macula lutea is an oval-shaped pigmented area near the center of the retina of the human eye . The macula in humans has a diameter of around 5.5 mm and is subdivided into the umbo, foveola, fovea, parafovea, and perifovea areas.(**Yanoff et al., 2014**)

The retinal nerve fiber layer is formed by the expansion of the fibers of the optic nerve; it is thickest near the optic disc, gradually diminishing toward the ora serrata.(**Peyman et al.,2014)**

During pregnancy, periodical hormonal, metabolic, hematologic, vascular, and immunological changes can be observed. Pregnancy hormones may lead to an increase in fluid volume in many tissues of the body. The increase of fluid in the body, especially in the last trimester, may cause an increase of retinal thickness. Pregnancy also can affect preexisting ocular conditions such as diabetic retinopathy, tumors, and immunological disorders.**(Ubica-Trazaska A et al.,2008)**

OCT has been used for retinal examinations in pregnancy in many studies. The macula is especially affected by pregnancy even when healthy – for example, two studies reported infrequent central serous chorioretinopathy in the third trimester in healthy pregnant women.(***Demir M et al.,2011)***

During pregnancy OCT may provide information reflecting the relationship between the retina, subretinal space, and retinal pigment epithelium; it also used for distinguishing retinal edema from serous neurosensory detachment.(***Demir M et al.,2011)***

Menopause is a physiological life period that potentially affects various organs and systems. Menopause is also associated with ocular changes. An increase in the incidence of ocular pathologies and ocular symptoms have been observed during the postmenopausal period. Postmenopausal hormonal status also seems to play a role in these ocular pathologies.(**Ataş M et al., 2014**).