شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

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

بعض الوثائق الأصلية تالفة

شبكة المعلومات الجامعية

بالرسالة صفحات
لم ترد بالأصل

MEDICOLEGAL IMPORTANCE OF GUN-SHOT RESIDUE (GSR)

Essay
Submitted for Fulfillment of Master Degree in Forensic Medicine and Toxicology

By
Dr. Mohamed Ahmed Mokhtar
(M.B.B.Ch)

Supervised By
Prof. Dr. Mohamed Kamel Ahmed
Prof.& Head of Forensic Medicine and Clinical Toxicology Department
Benha Faculty of Medicine

Dr. Marcelle Ramsis Haroun
Assistant Prof. of Forensic Medicine and Clinical Toxicology
Benha Faculty of Medicine

Dr. Refky Abd. EL. Rahman Amin
Lecturer of Forensic Medicine and Clinical Toxicology
Benha Faculty of Medicine

Benha Faculty of Medicine
2001

بسم الله الرحمن الرحيم

رب اشرح لي صدري ، ويسر لي أمري

صدق الله العظيم

To

my dear **wife**,

my lovely son **AHMED**

& to my **parents**

Acknowledgment

First of all thanks to ***Allah***, without his help, this work could not be accomplished.

I would like to present my sincere thanks and appreciation to ***Prof. Dr. Mohamed Kamel Ahmed***, Professor and Head of Department of Forensic Medicine and Clinical Toxicology, Benha Faculty of Medicine, for his great help, continuous support, meticulous supervision and fruitful guidance throughout this work.

Words stand short when coming to express my gratefulness and to express my deepest gratitude to ***Assistant Professor Dr. Marcelle Ramsis Haroun***, Assistant Professor of Forensic Medicine and Clinical Toxicology, Benha Faculty of Medicine, for her unlimited support, kind help and continuous encouragement and worthy remarks are beyond words of thanks.

I also like to thank ***Dr. Refky Abdel Rahman Amin***, Lecturer of Forensic Medicine and Clinical Toxicology, Benha Faculty of Medicine, for his sincere help and thorough supervision of this work.

I would like to present my sincere thanks and appreciation to ***Dr. Fakhry Mohamed Saleh Osman***, Primary Undersecretary of Ministry of Justice, Chief Medicolegal Examiner and Coroner and Head of Medicolegal Administration, for his continuous encouragement and aid.

I also like to thank ***Dr. Gamal Saleh Khalil***, Undersecretary of Ministry of Justice, Egypt, Assistant Head of Medicolegal Administration and Coroner, for his sincere help and assistance throughout this work.

I am truly grateful to my family for their encouragement and reassuring throughout this work.

I am also grateful to all my colleagues in the medicolegal administration for their helpfulness.

Mohamed A. Mokhtar

Contents

List of abbreviations

AA:	Atomic absorption
AAS:	Atomic absorption spectrometry
Ba:	Barium
BEI:	Backsatter image
FT:	Feet
GSR:	Gun shot residue
ICP– MS:	Inductively coupled plasma–Mass spectrometry
KWT:	Form of armor-piercing ammunition
MECE:	Micellar elctrokinetic cappillary electrophorsis
NAA:	Neutron activation analysis
ng:	Nanogram
NYCLAD:	Naylon coated lead bullets
Pb:	Lead
SEM:	Scanning electron microscope
SEM-EDS:	Scanning electron microscope / Energy dispersive spectrometry
SEM-EDX:	Scaning electron microscope/Energy dispersive X ray analysis
SP:	Antimony
TMDT:	Trace metal detection technique
um:	Micrometer
WP:	Wounding power
α:	Alpha

List of figures

Introduction and Aim of the work

Introduction

Due to the lack of informations obtained from the crime location, the investigators often ask the laboratories to do various types of analysis. Particle analysis has been fashioned into the most defenit method of identification and the most successful method of detecting the gun-shot residues to date (***Guanratnam et al., 1994***)

Gun shot residue has been dealt with as analytical evidence in suicides, homicides and other firearms related incidents for many years and has a good deal of attention (***Singer et al., 1996***)

It was important to find a method to investigate the cases which arise from firearms as during ballistic study, a weapon and a bullet may be linked or their association may be ruled out by comparison of the micro-strations on the bullet from the scene of the crime and those left on one from an experimental shot (***Dufosse et al., 1998***). The chemical analysis of a bullet found in a body or on the crime's scene, may give the investigator very important clues (***Peters et al., 1998***).

Aim of the work:

The aim of this study is to throw light on the importance of gun shot residue (GSR) in firearm injuries, methods of detection and indentification of GSR particles and to give an account on different types of ballistics, weapons and firearm wounds.

chapter I
History of firearms