

الآية

{ ان في ذلك لذكرى لمن كان له قلب أو ألقى السمع وهو شهيد }

صدق لله العظيم سورة ق آية 37

Dedication

To my parent who gives me hold forever

***To my brothers and my sister who support and
mind***

To all my big family for their care

To my best friends for their mural support

To all being who helps me to complete this study.

Acknowledgement

***All my recognition and credit to my supervisor
Dr.Husain Ahmed Hassan.***

***And I recognition and credit to technologist
Mohamed Abd alwahab. And my gratitude for
Royal scan center and king Fahad cardiac center
and all friendship there.***

List of abbreviations

| | |
|--------|---|
| BU/BUN | Blood urea/Blood urea and nitrogen |
| CT | Computerize tomography |
| CA | Coronary angiography |
| CAD | Coronary artery disease |
| CCTA | Coronary computed tomography angiography |
| CABG | Coronary artery bypass graft |

| | |
|-----------|--|
| CACS | Coronary artery calcium scoring |
| CTMD/MDCT | Computerize tomography multi-detector Multi-detector computerize tomography |
| DM | Diabetic mellitus |
| DAS | Digital subtraction angiography |
| ECG | Echocardiogram |
| EKG | Electrocardiogram |
| FRS | Framingham risk scoring |
| RCA | Right coronary artery |
| LMA | Left main descending |
| LAD | Left anterior descending (distal) |
| LCA | Left coronary artery |
| S.C | Serum creatinine |
| GE | General electric |
| KV | Kilovolt |
| MA | Mille ampere |
| RV | Right ventricle |
| LV | Left ventricle |
| LDL | Low density lipoprotein |
| HDL | High density lipoprotein |
| MRI | Magnetic resonance image |
| PET | Positron emission tomography |
| PTCA | Percutaneous transluminal coronary angioplasty |
| LCX | Left circumflex |
| CAT | Computerize axial tomography |
| EBCT | Electron beam CT |
| RA/LA | Right/left atrium |

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Abstract

The aim of this study was to assess the appearance of the coronary artery (appearance, pathological change and the most coronary artery effect by pathology) by using multi-slice CT angio (CT scan 64 slice) and cardiac catheterization and to know the best way to do this exam and to know the importance, characteristic and limited from the other exam which evaluate the risk factor in coronary artery.

Study was done in Royal scan center in Khartoum and retrospective data from King Fahad cardiac center in Kingdom of Saudi Arabia "Riyadh". The study sample was 50 patients, 30 of them underwent to CCTA and 20 of them underwent to cardiac catheterization by vein.

In the study the positive patient who diagnosed by CCTA were 17(56.6%) from CCTA group 11(64.7%) of them have Ca deposits, 4(23.5%) have coronary artery stenosis and 2(11.7%) have congenital anomalies. the rest of the CCTA group are normal in configuration.

The positive patient who diagnosed by cardiac catheterization 6(30%) from this

group have Ca stenosis, the rest of the group are normal.

Also the capable to diagnose many type of pathology by use CCTA like calculate Ca scoring in any coronary artery witch that difficult to detect by cardiac catheterization and other exams specifically and that cannot complete the CCTA if it's in high level because there are more risk factor and guaranty the image quality. The study showed that the most affected branches were as follows LAD have the most risk factor by any why that risk in percentage 43.50% , RCA 30.40% , LCX 21.7% , LMA 4.4% the lasted one is PDA in percentage near to zero.

Both technique (CCTA and cardiac catheterization) perform good visualized of larger coronary arteries branches, but cardiac catheterization visualized smaller branches better than CCTA.

مستخلص البحث

يهدف البحث لتقييم ظهور الشرايين التاجية (المظهر، المرض والاكثر تأثرا بالمرض) بواسطة جهاز الأشعة متعدد الشرائح وبالتحديد جهاز الأشعة المقطعية ذي ال 64 كاشف وميضي ومعرفه الطريقه المثلي لعمل هذا الفحص بالاضافه لمعرفة أهميته ,مميزاته ومحدوديته بالنسبه للفحوصات الأخرى التي تقيم عامل الاخطار في الشرايين التاجية.

تمت الدراسه في مركز رويال سكان بالخرطوم وقد استعين ببعض من فحوصات الأشعة المقطعية والقسطره القلبيه من مركز الملك فهد للقلب بالمملكة العربية السعودية "الرياض". أجريت الدراسه على 50 مريضا , 30 منهم خضعوا لفحص الأشعة المقطعية و 20 مريض من العينه خضع لفحص القسطره القلبيه بالوريد.

في هذه الدراسه كان عدد الحالات الموجبه 17حاله بنسبه (56.6%) تم تشخيصهم بالاشعه المقطعية للشرايين التاجيه 11 منهم بنسبه (64.7%) يعانون زياده في ترسيب الكالسيوم , 4 منهم بنسبه (23.5%) يعانون من ضيق الشرايين التاجيه , 2 (11.7%) منهم يعانون من عيوب خلقيه . الحالات الموجبه التي تم تشخيصها بقسطره القلب كان عددها 6حالات (

30%) من الذين خضعوا للفحص بالقسطره القلبيه وكانوا جميعا يعانون من ضيق في الشرايين التاجية اما بقيه العينه فكانت لاتعاني من مشاكل في الشرايين التاجية. خلص البحث الى أن الأشعة المقطعية وسيله جيده للكشف عن أمراض الشرايين التاجيه بطريقه آمنه حيث كشفت عن وجود مشاكل في اكثر من 46% من مجمل العينه المأخوذه والذين يشك في

وجود مشاكل في الشرايين التاجية لديهم حيث وجد انه 26.7% يعانون من ضيق في الشرايين و 73.3% يعانون من زياده في نسبه يرسب الكالسيوم و 6.7% لديهم مشاكل خلقية،بينما كشفت القسطره القليه عن مشاكل 30% من العينه لكننا قمنا بمعالجه المشكله أثناء الفحص . كما اننا أستطعنا تشخيص عدده أمراض بواسطه جهاز الاشعه المقطعيه متعدد الشرائح مثل حساب نسبه الكالسيوم في كل شريان على حده والذي يصعب قياسه بواسطه القسطره القليه او الفحوصات الأخرى بدقه

والتي لايمكن في حاله ارتفاع نسبته اتمام فحص الشرايين التاجيه بواسطه الاشعه المقطعيه لزياده عامل الاخطار وعدم ضمان جودةصوره.

كما خلصت الدراسه الي أن الشريان الاكليلي الايسر الامامي النازل هو الأكثر تعرضا لعامل الاخطار أيا كان بنسبه 43.50% يليه الشريان الاكليلي الايمن نسبه 30.40% ثم الفرع المنعطف الايسر 21.7% ثم الشريان القلي المتوسط 4.4 % وان الاقل تأثرا هو الشريان القطري الخلفي حيث كانت نسبه تأثره قريبه من الصفر. تقنيه الاشعه المقطعيه والقسطره القليه توضح بدرجة جيده جميع الفروع الرئيسيه للشرايين التاجيه وتقل نسبه توضيح الفروع الرئيسيه بتقنيه الاشعه المقطعيه للشرايين التاجيه.

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