Practical of the mammography in Cameroun: cases of the Cathedral Medical Centre and Autonomous Center of Radiology and Medical imagery, in Yaounde, Regional Hospital of Bafoussam.

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ABSTRACT

The objective of this study was to evaluate the level of application of the recommendations as regards technique of mammography by the manipulators in the medical structures through the appreciation of the quality of the stages of realization and protection against radiation measurements and protection against the infections at the time the examination of mammography and the analysis the criteria of success on images of mammography.

For that, a descriptive study carried out in the form of investigation of three (03) months transverse observation coupled to a retrospective study of five (05) months was carried out through a card of data-gathering on the criteria of successes and the evaluation of the respect of the means of protection against radiation and the rules of basic hygiene by the various manipulators of mammography.

44 mammography examinations were part of the study, 61,4% of examination were done after programming, 61.4% with an explanation of the examination process before completion, 97,7% were made with the preparation of the examination room, 40,9% physical examination were done by the manipulator. About 22,7% of patients felt pain during compression and 17,8% complained of breast compression by manipulators, 95,5% of manipulators informed patients on what to do in order to get hold of the results. Protection against mammography infections was not a reality in these health facilities. Protection against radiation was simplified to the wearing of lead apron in pregnant patients and the use of a leaded screen for the manipulators. The resumption of incidence were present with 33,3% of oblique, The main criteria of success not respected for the cranio caudal incidence was the part of the breast cut, especially the pectoral muscle, the lack of symmetry of the breasts and the presence of skin folds, the oblique incidence was particularly difficult to performed by manipulators which is what might explain the weak rate of process success.

Keywords: Evaluation, practice, mammography.

RESUME

L'objectif de cette étude était d'évaluer le niveau d'application des recommandations en matière de technique de mammographie par les manipulateurs dans les structures sanitaires à travers l'appréciation de la qualité des étapes de réalisation et des mesures radioprotection et de protection contre les infections lors l'examen de mammographie et l'analyse les critères de réussite sur images de mammographie.

Pour cela, une étude descriptive réalisée sous forme d'enquête d'observation transversale de trois (03) mois couplé à une étude rétrospective de cinq (05) mois a été effectuée à travers une fiche de collecte des données sur les critères de réussites et sur l'évaluation du respect des moyens de radioprotection et des règles d'hygiène de base par les différents manipulateurs de mammographie.

44 examens de mammographie ont fait partie de l'étude, 61,4% d'examen ont été fait après programmation, 61,4% avec explications du déroulement de l'examen avant réalisation, 97,7% étaient fait avec préparation de la salle d'examen, 40,9% avec réalisations d'examen physique par le manipulateur, 22,7% de sujet ont ressenti la douleur lors de la compression et 17,8% se sont plaintes de la compression du sein par les manipulateurs, 95,5% des manipulateurs ont informé les patients sur la conduite à tenir afin d'entrer en possession des résultats. La protection contre les infections en mammographie n'était pas une réalité dans les structures sanitaires et la radioprotection se résumait au port de tablier plombé chez les patientes enceintes et l'utilisation d'un paravent plombé pour le manipulateur. Les reprises des incidences étaient présentes avec 33,3% pour l'incidence oblique. Les principaux critères de réussites non respectés, pour l'incidence crânio-caudale étaient la partie du sein coupé, surtout le muscle pectoral, l'absence de symétrie des deux seins et la présence de plis cutanés, l'incidence oblique était particulièrement difficile à réaliser par les manipulateurs, c'est ce qui pourrait expliquer le faible taux de critères de réussites en ce qui concerne la visualisation du grand pectoral, l'absence de symétrie des deux seins et la visualisation du sillon sous mammaire dans les structures.

Mots clés **:** Evaluation, pratique, mammographie.

I- INTRODUCTION

The purpose of the mammography is a radiographic examination of the centres making it possible to obtain images of glandular fabrics using x-rays , it is to detect possible anomalies, being able to direct towards a neoplasy of the centre or to even reveal anomalies before even as they did not cause clinical symptoms. It is carried out in a service of radiology and medical imagery generally by an assisted manipulator of medical electroradiology of the doctor radiologist, thus contributing to the prevention, tracking, the diagnosis, the treatment and research [1].

Nowadays, other techniques of medical imagery allow the exploration of pathologies mammaires, such;¶echography, the scanner, the IRM.¶According to Levy L and all [2], the mammography seems the examination of reference for the tracking and the diagnosis of the affections mammaires.¶ The mammography is regarded as the only tool for diagnosis having proven reliable for detection of nonpalpable lesions and tracking.¶ Its good sensitivity and its reproducibility made of it the technique of reference for the tracking of the breast cancer.¶It makes it possible to detect against 95 % of cancers 50 to 60 % with the clinical examination [3].¶In Cameroun, the breast cancer accounts for 20 to 30% of cancers of the woman [4] and it is one of the first causes of tumoral mortality of the woman in the developed countries [5].¶One distinguishes two types of mammography:¶mammography of tracking and diagnostic mammography [6].¶

Analogical or numerical, the mammography must be of irreproachable quality and technique [7].The diagnostic value of an examination mammographic is strongly related to the quality of the examination which depends to him partly on the experiment on the technician in medical radiology (TRM) or the radiotechnician [8].As an examination of first interest in tracking of cancer and taking into account its great sensitivity, the examination mammographic request an optimal quality of the technique of realization.The respect of the quality of the stages of realization of the examination has a cardinal importance and an impact on the quality of the stereotypes and on which in its turn the result depends on the examination [9].In a context of quality assurance, we decided to bring brief replies to the interrogation relating to the respect of the recommendations in terms of realization of the mammography, also we laid down the following specific objectives to determine the level of application of the recommendations as regards practice of the mammography:

Specific objectives

1 To assess the quality of the stages of realization of the examination of mammography.

2 To analyze the criteria of successes of an examination of mammography.

3 To arise measurements of protection against radiation used

4 To appreciate the protection measures against the infections used for the examinations of mammography.

II-   METHODOLOGY

1- Frameworks and place of the study

The study was carried out in 03 medical structures with knowing in Yaounde: **The Medical centre the Cathedral (A) and the Autonomous Center of Radiology and Medical imagery (B) and in Bafoussan, with the regional hospital (C).**

2- Materials

1- Apparatus of mammography used in the center of radiology and medical imagery of the west (C)

With the CRIMO of Bafoussam, the apparatus used for the mammography is a sénographe of mark GE healtcare, equipped with:

> A generator, a system of compression motorized with control the foot and a manual system of compression, a bucky of 18x24 and 24x30cm, a format of cassette is used with knowing 24 X 30 cm, a console of exposure, a clear room having a developer, a station of visualization and image processing, a printer, a négatoscope.

2)- Apparatus of mammography used in the medical centre the cathedral of Yaounde

In the medical centre the cathedral, the system of mammography consists of an apparatus of having mark DMR (a generator, a field of radiation of 24X30cm, a system of compression motorized with control the foot and a manual system of compression, a bucky of 18x24 and 24x30cm, a console of exposure, parts of markings only dedicated to the mammography), a generator, several cassettes of 18x24cm and 24x30cm only dedicated to the mammography, a clear room having two developers and two stations of visualization and image processing, a room of impression of the images and several stations of visualization of images withscreens of computer and a négatoscope dedicated to the mammography. The center has an Internet site and several telephone numbers for the appointments.

3) Apparatus of mammography used in the autonomous center of radiology and medical imagery of Yaounde (B)

With the CARIM, the apparatus used is a mammographe of mark ***Planmed Sophie***.it is equipped with:

A generator, a system of compression motorized with control the foot, Potter with bucky of 18x24cm and 24x30cm, two formats of cassette are used with knowing 18 X 24 cm and 24 X 30 cm, a console of exposure, a clear room having a developer, a station of visualization and image processing, a printer, a négatoscope.

For the appointments, the center has a telephone number.

3- Methods

- The study descriptive and was carried out in the form of investigation of transverse observation over one three (03) period June to August 2014 coupled to a retrospective study of five (05) months going from January to May.

- 44 examinations carried out by 9 manipulators in radiology filling the following criteria:To be of different age, of male or female sex, graduates and giving a report on years of experiment were evaluated.

- The training manipulators were excluded from the study.

- a questionnaire for the patients and another for the manipulators have among the collection of the data, in connection with the technique, the criteria of successes, the respect of the means of protection against radiation and the rules of basic hygiene by the various manipulators.

- Information on the appointment management was obtained thanks to the information provided by the patients.

- Thanks to the questionnaire manipulator we obtained information on the sex, the years of experiment, and by observing the examinations we could arise the level of reception of the patients by these manipulators which we classified on a scale on three levels (cordial, aggressive, neither cordial neither aggressive) we also judged the manner of communication with the patient according to the scale on following level (Courteous, neither courteous nor aggressive and aggressive).

- information on the practical realization of the examination, the compliance with the rules of protection against radiation and basic hygienes was obtained thanks to the observation of the manipulators at the time of the practice, to reach that point we intended ourselves with the heads of service so that the explanation of our presence in the service is an academic training course and that the questionnaires were there for the report/ratio of training course the purpose of what was to prevent that the latter positively do not improve their technique our involved.

- During the collection of the data, the filled out questionnaires were reserved for a use strictly professional for our research and stored in a sure place.During the analysis of the results, the data do not have to in no case falsified nor plagiarized and the structures were codified by letters to preserve their anonymity.If the institutions wished it, we committed ourselves transmitting the study to them finished and validated once.We sorted the questionnaires by structure, then we entered the results with the means of the software Sphinx version 4.0 and the Excel spreadsheet.

- The statistical test of chi2 made it possible to compare the distribution of the variable with a distribution of reference in order to obtain the level of significativity, it is the expressed certainty of the dependence of the two variables [49].   Chi2 were calculated with the following theoretical distribution:YES (50,0%), NOT (50,0%) and according to the value of this certainty, the statistical threshold of significativity was fixed by;very significant (1-p > 99%), significant (99%>1-p>95%), not very significant (95%>1-p>85%), nonsignificant (1-p<85%).This certainty is noted "1-p", p being the risk to be mistaken or p-is been worth.

4 Ethics

No procedure of research was committed without the agreement of the head of service and the commission of ethics of each structure of health.We joined to the request a protocol of study and a card of assent lit for each patient [additional cf].No further information on the patients and the manipulators was required.We had proposed the free choice with each manipulator to take part or not in the study.The questionnaires were entirely anonymous, consequently the confidentiality was respected since that no personal data of the manipulator nor of the patients was used for this study.

III:RESULTS

The study was carried out in trois(03) structures of health that we named A, B and C, a public structure and two private structures.

1-epidemiology
Age and sex of the patients
We had 44 subjects of female sex for 44 examinations observed.95,5% of the patients were old of more than 32 years, and the average age was 4åns.

2-programming of the examination and information of the patient the day of the appointment
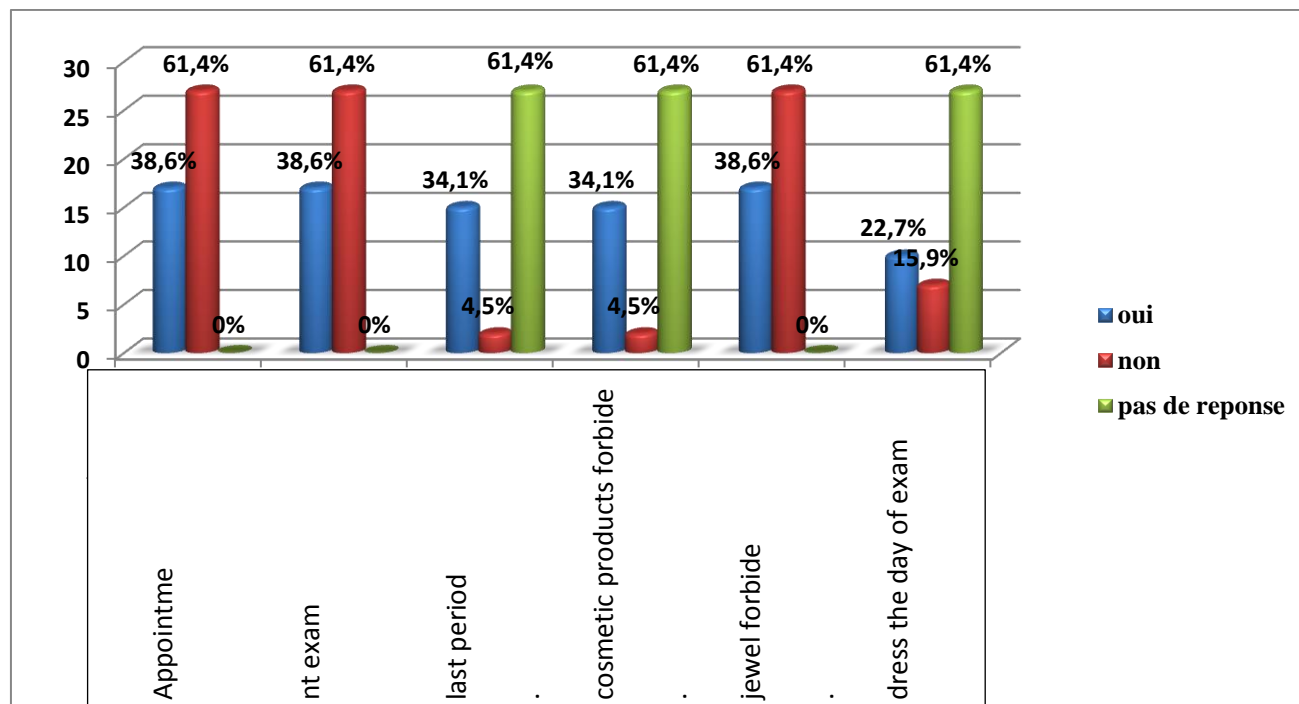
Fig1:Programming of the examination and information of the patient the day of the appointment

1- *Appointement*

61,4% of patients came to carry out the examination after an appointment against 38,6% is 27 patients what gives us a difference of 22,8%, according to the statistical test, 1-p = 86,83% thus consequently there does not exist great difference between the examinations makes with go and those made without go in our structures.

2- *Information on the course of the examination the day of the appointment*

17 patients i.e. 38,6% answered yes the question of knowing if information were received on the course of the examination the day of the appointment.

3- *Information on the correlation between GDR and the examination*

34,1% of patients confirm to have been informed on the correlation between their GDR and the examination.

4- *Prohibition to use cosmetic products on the skin the day of the examination*

15 patients either 34,1% confirmed to have been informed on the need for not using of cosmetic product on the skin the day of the examination against 2 patients or 4,5% who did not know anything of it.

5- *Prohibition of the port of certain jewels the day of the examination*

36,6% of patients confirmed to have received information on the prohibition of the port of piercing or jewels like the collar and the earrings the day of the examination.

6- *Clothing the day of the examination*

22,7% of patients against 15,9% confirm to have received information on the manner of getting dressed the day with the examination.

3- realization of the examination
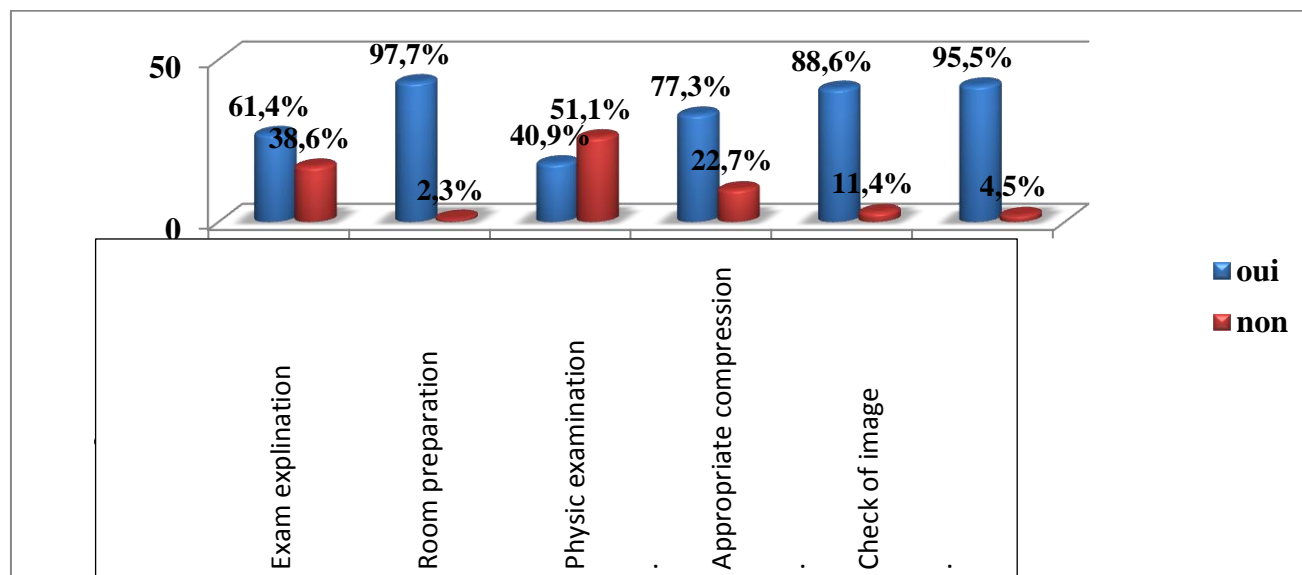
Fig 2:Elements of the realization of the examination

1- *Explanation of the course of the examination and realization of the examination*

On 44 examinations observed at the time of our study, this reveals that 61,4% of patients received explanations on the realization of their examination against 38,6 %. the difference with the theoretical distribution is considered to be not very significant according to the statistical test bus 1-p = 86,83%, therefore he does not exist great difference between examinations makes with explanation of the unfolding of examination and those done without explanation.

2- *Preparation of the room before examination*

97,7% of examinations were done with a preparation of the room before examination against 2,3% the difference with the theoretical distribution is very significant according to tests of Chi2, p-been worth is much lower than 1%, because 1-p > 99,99% thus the majority of the examinations of mammography are carried out with preparation of the room.

3- *physical Examination*

40,9% of examination against 59,1% were made with physical realization of examination, according to the statistical test carried out it does not exist significant difference between mammography made with physical examination and those carried out without physical examination because the difference with the distribution of reference is not significant, 1-p = 77,22%.

4- *Good compression*

22,7% of examination were done with demonstrations of pain due to compression on 44 examinations against 77,7%, if one sticks to the statistical test, the difference of 54,6% is very significant bus 1-p = 99,97%, consequently compression is overall well carried out by the manipulators.

5- *Checking of the images before the departure of the patient of the room of examination*

88,6% of the manipulators against 6,8% checked the images before the departure of the room of the patient this difference is considered to be very significant according to the test of Chi2, p-been worth is much lower than 1%, 1-p > 99,99%, therefore we can affirm that the manipulators check the images before the departure of the patients.

6- *Information of the patient on the action to be taken finally of entry in possession of the results*

95,5% of the patients against 4,5% were directed towards the action to be taken in order to entered in possession of their result what gives a difference of 91% this difference is very significant according to the test of chi2 bus 1-p > 99,99% thus we can say that the manipulators inform the patients on the action to be taken finally of entry in possession of their results in the structures of health.

7- *Complaints*

On 44 questioned patients we collected 15 complaints, including 2 complaints either 4,4% for the reception by the manipulator, 8 complaints 17,8% for compression, and 6 complaints or 13,3% over the latency before the realization of the examination.

4-manipulators

- 6 manipulators is 66,7% and 3 manipulators 33,3% furnished our study.
- The manipulators had more experience than the manipulators.
- The reception of the patients was cordial at 6 manipulators is 55,6% especially by the tested manipulators, 4 manipulators were courteous in the communication with the patients i.e. 44,4%.

- The incidences were taken again by the less tested manipulators.

5-PROTECTION AGAINST INFECTIONS

ACTIVITES		Effectifs manipulateurs	Pourcentages
Port des gants entre 2 patients	OUI	4	44,4%
	NON	5	56,6%
	TOTAUX	9	100%
Nettoyage des cassettes entre 2 patients et dès que souillure	OUI	5	56,6%
	NON	4	44,4%
	TOTAUX	9	100%
Nettoyage du système de compression entre 2 patients et dès que souillure	OUI	8	88,9%
	NON	1	11,1%
	TOTAUX	9	100%
Lavage des mains après examen	OUI	2	22,2%
	NON	7	77,8%
	TOTAUX	9	100%

Table 1:Protection counters the infections

44,4% of the manipulators wore gloves between each patient and 56,6% cleaned the cassettes between two patients, the cleaning of the pallet of compression and the bucky between each patient was a reality if one is due oneself some to the fact that 8 manipulators out of 9 i.e. 88,9% made it before the beginning of each examination, 77,8% did not wash the hands after the examination.

6-protection against radiation

Protection against radiation was summarized with the wearing of apron leaded at the pregnant patients and the use of a folding screen leaded for the manipulator.

- **Recovery,** we had a percentage of resumption of the examinations of 44,4%.The incidence obliques was the incidence most taken again by the manipulators with 33,3%.
- We noted that in 100% of the cases the ancillary medical personnel whatever it is is always behind the folding screen leaded during the examinations mammographies.
- 22,2% are 02 manipulators took again once an examination, and 22,2% began again twice.

7-Criteria Of IDENTITE

In the three structures criteria of identity such as:name, first name, age or date of birth, date from the examination, the incidence:cranio - caudal, oblique external, the orientation high or low, médial or side, internal or external, left or right were directly printed on films.

8 CRITERIA OF SUCCESSES

Cranio-Caudal A-Incidence

INCIDENCE	CRITERES DE REUSSITES	STRUCTURE A				STRUCTURE B				STRUCTURE C		
			Nombre examen	Pource ntage			Nombre examen	Pourcen tage			Nombre examen	Pourcent age
cranio-caudale	visibilité graisse retroglandulaire	oui	29	96,7%	Oui		35	100%	Oui		35	100%
		Non	1	3,3%	Non		0	0%	Non		0	0%
		Total	30	100%	Total		35	100%	Total		0%	100%
	visibilité du pectoral sur le bord du cliché	Oui	7	23,3%	Oui		14	40,0%	Oui		8	22,9%
		non	23	76,7%	Non		21	60,0%	Non		27	77,1%
		Total	30	100%	Total		35	100%	Total		35	100%
	visibilité de la glande située dans la partie externe du sein	Oui	26	86,7%	Oui		35	100%	Oui		35	100%
		non	4	13,3%	Non		0	0%	Non		0	0%
		Total	30	100%	Total		35	100%	Total		35	100%
	mamelon bien centré et se projetant en dehors du sein	Oui	23	76,7%	Oui		34	97,1%	Oui		26	74,3%
		non	7	23,3%	Non		1	2,9%	Non		9	25,7%
		Total	30	100%	Total		35	100%	Total		35	100%
	absence de pli cutané et d'artefact	Oui	21	70,0%	Oui		26	74,3%	Oui		20	57,1%
		non	9	30,0%	Non		9	25,7%	Non		15	42,9%
		Total	30	100%	Total		35	100%	Total		35	100%
	image symétrique des deux seins	Oui	2	6,7%	Oui		16	45,7%	Oui		11	31,4%
		non	28	93,3%	Non		19	54,3%	Non		24	68,6%
		Total	30	100%	Total		35	100%	Total		35	100%

Table 2: Criteria of successes cranio-caudal incidence

❖ **visibility lubricates retroglandulaire**

In the three structures, grease retroglandulaire appeared very well on the images, this is why we had **96,7%** out of 30 images for structure A, **100%** out of 35 images for the structure B and **100%** on 3ïimages for the structure C.

❖ **visibility of pectoral on the edge of film**

The rate of visibility of pectoral on the edge of the stereotype was weak in the structures A, B and C with respectively **23,3%, 40,0%** and **22,9%**

❖ **visibility of gland located in the external part of the centre**

The visibility of gland located in the external part of the centre was almost present except in structure A or we observed a rate of success of **86,7%** versus **100%** for the two other structures.

❖ **Well centered nipple and projecting itself apart from the centre**

In structure A the nipple was well centered and was projected apart from the centre on **76,7%** of stereotypes against **23,3%.**In the structure B we had a percentage of success of **97,1%** against **2,9%,** whereas in the structure C we had **74,3%** of successes against **25,7%.**

❖ **Absence of cutaneous fold and artifact**

The structure C had a strong rate of cutaneous fold on the stereotype with a percentage of **42,9%** versus **25,7%** and **30%** in structures B and A.

❖ **Symmetrical image of the two centres**

We had a rate of bad symmetry of the images very high in structures A, and C with respectively 93,3% and 68,6% against 54,3% for the structure B In structure A, we had a strong rate of lack of symmetry of the images with 93,3% and the structure C with 68,6%.

B INCIDENCE OBLIQUES

The analysis of the criteria of successes of the oblique incidence obtained in the various structures shows variations.

Incidence	Critères de réussites	STRUCTURE A			STRUCTURE B			STRUCTURE C		
			Nombre examen	Pourcentage		Nombre examen	Pourcentage		Nombre examen	Pourcentage
	visualisation correcte du grand pectoral	Oui	1	3,3%	Oui	24	68,6%	Oui	27	77,1%
		Non	29	96,7%	Non	11	31,4%	Non	8	22,9%
		Total	30	100%	Total	35	100%	Total	35	100%
	dégagem									

Oblique externe	**ent du sillon sous-mammaire**	Oui	2	6,7%	Oui	15	42,9%	Oui	13	37,1%
		Non	28	93,3%	Non	20	57,1%	Non	22	62,9%
		Total	30	100%	Total	35	100%	Total	35	100%
	visualisation du prolongement axillaire	Oui	20	66,7%	Oui	18	51,4%	Oui	29	82,9%
		Non	10	33,3%	Non	17	48,6%	Non	6	17,1%
		Total	30	100%	Total	35	100%	Total	35	100%
	visualisation de la lame graisseuse rétro-glandulaire	Oui	28	93,3%	Oui	28	80,0%	Oui	31	88,6%
		Non	2	6,7%	Non	7	20,0%	Non	4	11,4%
		Total	30	100%	Total	35	100%	Total	35	100%
	mamelon bien centré se projetant en dehors du sein	Oui	21	70,0%	Oui	24	68,6%	Oui	27	77,1%
		Non	9	30,0%	Non	11	31,4%	Non	8	22,9%
		Total	30	100%	Total	35	100%	Total	35	100%
	absence de pli et d'artefact	Oui	21	70,0%	Oui	27	77,1%	Oui	22	62,9%
		Non	9	30,0%	Non	8	22,9%	Non	13	37,1%
		Total	30	100%	Total	35	100%	Total	35	100%
	symétrie des deux seins	Oui	1	3,3 %	Oui	17	48,6%	Oui	16	45,7%
		Non	29	96,7%	Non	18	51,4%	Non	19	54,3%
		Total	30	100%	Total	35	100%	Total	35	100%

Table 3:criteria of successes incidence obliques

❖ **correct visualization of large pectoral**

On 30 images obtained in structure A, the pectoral one did not appear on 29 images is **96,7%** while in the structures B and C on 35 images chosen in each one of these structures, we had respectively 24 and 27 images having the pectoral one correctly on image for averages of **68,6%** and **77,1%**.

❖ **release of the furrow under-mammaire**

We observed the same tendency with regard to the evaluation of the release of the furrow under mammaire except that here in the structures B and C, one rather observes a strong rate of absence of the release of the furrow under mammaire on image with respectively 20 images is **57,1%** and 22 images is **62,9%** out of 35 images.

❖ **visualization of the prolongation axillaire**

In the structure C we recorded a strong rate of image on which it y' had a visualization of the prolongation axillaire is 29 against out of 35 for a percentage of **82,9% 51,4%** for the structure B and **66,7%** for structure A.

❖   **visualization of the retro-glandular lubricating blade**

The glandular blade retro was almost visible on all the images in the structures A, B, C with respectively **93,3%, 80%** and **88,6%.**

❖   **Well centered nipple being projected apart from the centre**

The good centering of the nipple on image was more representative in the structure C with **77,1%** and we obtained **31,4%** of absence of nipple centered on image in the structure B**.**

❖ **Absence of fold and artifact**

In structure A we observed a strong rate of absence of symmetry of the images, 29 images out of 30 compared with respectively 18 out of 35 images for the structure B and 19 out of 35 images for the structure C what respectively gives us percentages of **96,7%, 51,4%** and **54,3%** for this criterion of success.

C-Incidence OF PROFILE

The incidence of profile, nonsystematic was carried out for the mammography of diagnosis in our structures, we obtained 04 images in the base of the data in only one structure.

INCIDENCE	CRITERES DE REUSSITES	STRUCTURE B		
			Nombre examen	POURCENTAGE
	Étalement de la glande	Oui	4	100%
		Non	0	0%
		Total	4	100%
	Mamelon bien centré et au zénith	Oui	2	50%
		Non	2	50%
		Total	4	100%
INCIDENCE DE PROFIL	lame graisseuse retro-glandulaire	Oui	4	100%
		Non	0	0%
		Total	4	100%
	Visibilité du sillon sous -	Oui	2	50%

mammaire	Non	2	50%
	Total	4	100%
Visibilité du Pectoral	Oui	2	50%
	Non	2	50%
	Total	4	100%
Absence de pli et d'artefact	Oui	2	50%
	Non	2	50%
	Total	4	100%
symétrie des deux seins	Oui	1	25,0%
	Non	3	75,0%
	Total	4	100%

able 4:criteria of successes incidence.

Iv-discussion

Over one 3 months period, the observation of 44 examinations of mammography in three structures of health furnished our study.

1-epidemiology

During the study, only one patient was 20 years old is 2,3% of the sample, only one other was old of 31ans for 2,3% and 42 patients were 32 years old and more for 95,5% what gave us an average age 48 years.This corroborates a little with the results of **Dr. Zeh Odile Fernande et al.** [46] who obtained a 53 years average.We think that that is explained by the fact why cancer occurs in our medium at a relatively young age 45-54 years [48]

You and programming of the examination 2-return

61,4% of patients came to carry out the examination after an appointment against 38,6% is 27 patients out of 44, our results seem to be contradictory with the publication of **(CNGOF) the national College of the gynaecologists and French obstetricians**, which stipulates that all the examinations of mammography must be made on go because it is the day of the appointment which the patient receives all information on the preparation for his examination, this is why the information of the patient on the correlation between the examination and GDR is very crucial, particularly the not ménopausées patients, a study published in **the Program québécois of tracking of the breast cancer** affirms that ' information de la patiente sur la corrélation entre l' examen et la DDR est très cruciale, $$+17 particulièrement les patientes non ménopausées, une étude parue dans $$+25 le Programme québécois

de dépistage du cancer du sein $$+26 affirme quein much of institutes of radiology, the mammography is programmed in general between 7th and the 17th day of the cycle bus for this period, the compression of the centre is easier and less painful and the radiological transparency of the gland mammaire is increased by best compression [19].For physiological reasons, the density mammaire can increase during second half of the cycle.Thus in the study of **White E et al.** bearing on old women from 40 to 49 years, the proportion of the very dense centres passes from 23 % in first part of cycle to 28 % at the time of the second part of cycle [55].According to our results, 34,1% of patients confirm to have been informed on the correlation between the examination and GDR, this can explain itself after interrogation by the fact why certain manipulators omit to pass this information under pretext that the majority of the patients coming to pass an examination of mammography reached the menopause.

3-reception and information of the patient

The reception of the patients by the manipulators was cordial in only 55,6% of the cases in our study, **the Guide Good Practices of the Mammographie Program/2nd edition 2014** [35] seems to contradict these results because it affirms that the reception for an examination of mammography should be in 100% of the personalized case, the manipulator must adopt a respectful, to be polished, cordial and pleasant attitude, it or it must humanize the reception, to listen to the customer well.

61,4% of patients received explanations on the realization of their examination this moves away from the point of view of **Cecile ALVAREZ** [50] who insinuates that the information of the patient concerning the examination procedures and the risks that it will undergo as well as the results of these examinations is a question of medical ethics and must be exempted in a clear way, adapted to the patient and his clinical situation.

Physical 4-examination

The physical examination belongs to the gestures to be carried out by the manipulator at the time of the realization of an examination mammographic and consists of the palpation of the centres, of the hollows axillaires and known claviculaires [24] that makes it possible the manipulator to find the dial sensitive and to locate a possible nodule in order to carry there more interest at the time of the examination.This stage is followed with difficulty in our medical structures where 40,9% of patients followed profited from a pre physical examination mammographic carried out by the manipulator, we think that that is justified in our context by the fact that several manipulators seem to allot this role to the doctor.

5-compression

We obtained 22,7% of demonstrations of pain due to compression, our results move away from those found by **B Barreau et al [56]** who recorded 46% of case where compression mammaire was considered to be painful and of **the Guide Good Practices of the Mammographie Program/2nd edition** [35] which stipulates that discomfort?and?pain??résultant transient?of?the?application?of?la?compression is felt by roughly 6 % of the women during an examination of mammography, the lack of programming of the examinations explains certainly our results.

6 Protection against radiation and protection counter the infections

With regard to the appreciation of the protection measures against the infections, during our study several shutters were noticed, 44,4% of the manipulators wore gloves between each patient, 56,6% cleaned the cassettes between two patients, 88,9% cleaned the pallet of compression and the bucky between each patient before the beginning of each examination that seems to go in the same direction as **the Guide of the techniques of care in medical imagery 3** [23] which stipulates that the prevention of the infectious risk by the manipulators in mammography is a lawful and ethical requirement.

At the time of our study, protection against radiation was summarized with the wearing of apron leaded at the pregnant patients and the use of a folding screen leaded for the manipulator.To avoid the resumption of the incidences is one of the elements most significant of the protection against radiation of the patients in mammography because the resumption of an incidence entraine an accumulation of the amounts.Our results showed that the oblique incidence is the incidence most taken again with 33,3% of recovery and 44% of manipulators take again the stereotypes.This is in contradiction with the study of **Dubuis Carole** which found that the rate of recovery for the oblique-external incidence is 1.3%.A study undertaken by **Catherine Colin and coll** concluded that in mammography, there is more damage with an amount weak and repeated that with an emitted more significant amount only once, therefore the resumption of the incidences exposes to more accumulation of amount and should be to draw aside from any mammography thanks to a good technique of examination **[52]**.

7- criteria of successes

Positioning and compression are key factors in the success of the stereotypes [51]. The oblique-external incidence has of advantage of criteria of successes compared to the crânio-caudal incidence and

those are more specific, mainly for the pectoral muscle.Indeed, according to Bentley, Poulos and Rickard, the visualization of the pectoral muscle is a subjective criterion but determining for a correct positioning.It is influenced by the technique of positioning, the assumption of responsibility and the individual characteristics of the patient [53].It is what could explain the weak rate of criteria of successes with regard to the visualization of large pectoral and the visualization of the furrow under mammaire in our three structures, no identical research was not led to this subject, but according to our experiment, it could be explained in structure A by the realization of the mammography on line i.e. the cassette on the bucky.The study of **Dubuis Carole,** found the percentages according to, insufficient presence of the gland mammaire (39%), the presence of folds cutanés(25%), the anatomical point of view, the criteria of positioning for the crânio-caudal incidence are more difficult to obtain **Dubuis Carole,** found that the gland mammaire was insufficient on (39%) of mammographic image and the presence of cutaneous folds on (25%).These two explanations could be at the origin of the tendency observed.European Reference Organization for Qualité Assured Breast Screening and Diagnostic Services (EUREF) observes that more than 75% of the mammographies must be of good quality or perfect, less than 22% of average quality and less than 3% of inadequate quality Hofvind et al..[54].As observed by other authors, we noted that positioning was the principal element which conditioned the criteria of successes.Indeed, the analysis of Waaler and Hofmann reported that in the field of radio-diagnostic, the manipulators repeated the stereotypes due to inadequate positioning in 60% of the cases [39].The errors of positioning in mammography are strongly influenced by the characteristics of the patient (morphology, handicap…), the manipulators do not have any impact on those.However, they can influence the collaboration of the patients.An adequate assumption of responsibility makes it possible to slacken and decrease the anxiety of the patient (especially if it is a first examination) so that the examination proceeds under the best possible conditions.Moreover, the years of experiment of the manipulator bring to better maitriser the technique of positioning of the patients presenting of the specific characteristics, like describes it Hofvind and al.[54].

The principal criteria of successes not respected, for the crânio-caudal incidence are the part of the cut centre and the presence of cutaneous folds.To cure these errors, Guidelines for Quality Insurance in Mammography Screening published by Pender [37] described the need for adjusting the height of the bucky to the patient, in order to better visualize the totality of the centre, and for maintaining the centre on the detector by smoothing the skin for an optimal compression without cutaneous fold.Concerning the oblique-external incidence, the insufficient criteria on images are generally the insufficient presence

of the pectoral muscle and the nonvisible furrow infra-mammaire.With an aim of reducing these errors, Hofvind et al..[54] means describe to optimize the quality of the stereotype by releasing the muscles of the belt scapular to obtain a maximum of mobility of the centre and thus to be able to correctly draw it in order to visualize the pectoral muscle and the furrow infra-mammaire.It is noted that the errors due to the exposure of the stereotypes are quasi null.Indeed, as described in the analysis of Waaler and Hofmann [39], the numerical systems made it possible to strongly decrease the errors due to the exposure of the stereotype, consequently the errors of positioning remaining unchanged become the most significant cause of absence of criteria of successes on images in mammography.The results showed that the identifying information did not constitute a problem in mammography in these structures.Indeed, thanks to the numerical systems, information concerning the incidence and the side carried out can be modified with the console. Several studies showed that errors of compression occur on stereotypes considered to be satisfactory by unsatisfactory manipulators and with postériori by radiologists, it should be stressed that compression has a direct influence on the contrast and the resolution of the image.The study of Hofvind et al..(2008) the fact reports that 5.5% of the stereotypes mammographiques (crânio-caudal and oblique-external) was considered to be inadequate and the study of Bassett et al..(2000) of described 14% [40].This divergence leads us to question us on the recognition by the manipulators of an imperfect compression.

V CONCLUSION

According to **the Guide Good Practices of the Mammographie Program/2nd edition 2014** [35], the technique of realization of the mammography includes:The programming of the examination, the good reception the day of the examination, the explanation of the course of the examination, a good positioning, the good compression which it will depend partly on the communication with the patient during the examination.   The mammography uses x-rays and the minimization of the amounts of irradiation of the centre comes under a good technique and responsibility of an experienced personnel [32]. Occurred of the infections related to the care is a reality in mammography that it is the infection of the patient or that of the manipulator.

 Our work enabled us to evaluate the level of application of the recommendations as regards practice of mammography in certain structures of health camerounaise, it comes out from it there that:

-   Many examinations mammographic are carried out without programming or go.

- The manipulators more or less respect the mammographic recommendations as regards technique of realization of the examinations but nevertheless our results show that there are points where a detailed attention must be to carry in particular with regard to the reception of the patients, the explanation of the course of the examination, the communication with the patients at the time of the realization of the examinations, compression and positioning because these elements influence considerably the quality of the mammographic image when they are rigorously taken into account and actually applied by the manipulators.

- In our medical structures, protection against radiation in mammography is summarized with the wearing of apron leaded in the patients pregnant or likely to be it and the use of a folding screen leaded for the manipulator but of the efforts remain to be provided with regard to the resumption of the incidences and protection against the infections.

The study reveals the practical aspect of the mammography within the structures of health camerounaises, in spite of a rather reduced sample of the medical structures, this calls a work on broader scale, even extended to the whole of the territory, for better generalization of the results.

In addition, work remains of topicality bus having taken account of the adequate quality controls, the digitalization of the various plates mammographic, the use of the NTIC like means of appointment management.There remains however recommended to put forward the continuous medical training in our various public and deprived centers of medical imagery, to ensure the best followed patients presenting itself in medical structures for examination of mammography.

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