



Original article

Evaluation of Postoperative Pain in Posterior Segment Surgery of the Eye at the CHU-IOTA

Evaluation de la douleur postopératoire dans la chirurgie du segment postérieur de l'œil au CHU-IOTA

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Résumé

Les premières descriptions de la consultation d'anesthésie remontent à près de 50 ans dans les pays anglo-saxons. Ces consultations étaient limitées à certains patients à haut risque ou aux procédures sensibles. L'élément important dans l'évaluation des risques est qu'elle va bien au-delà de la simple visite pré-anesthésique. L'anesthésie pour la chirurgie ophtalmologique est généralement programmée, parfois semi-urgente, ce qui facilite la consultation d'anesthésie à distance. Il s'agissait d'une étude rétrospective et descriptive sur une année, de janvier 2019 à décembre 2019, portant sur tous les patients vus en consultation d'anesthésie. Les variables mesurées comprenaient des données sociodémographiques et des données d'évaluation anesthésique.

Pendant la période d'étude, 2092 patients ont été consultés en anesthésie pour une chirurgie ophtalmologique. L'âge moyen était de 50,27 ans avec des extrêmes de 1 et 104 ans. Le sexe masculin prédominait avec 51 % et un ratio de sexe de 1,04. Dans la série adulte, le groupe d'âge de 61 à 75 ans

était le plus représenté avec 42 %; dans le groupe des enfants, les 0 à 2 ans prédominaient avec 34,6 %. La profession ménagère était majoritaire avec 36,3 %. La chirurgie de la cataracte était l'indication chirurgicale dans 78,3 % des cas. L'hypertension était l'antécédent médical le plus fréquent avec 23,30 %, suivie du diabète avec 1,70 %. La glycémie, le taux de prothrombine et le temps de céphaline activée ont été réalisés chez 94,7 % des patients. Cette évaluation n'était pas nécessaire pour 5,3 % des patients. Les patients étaient classés ASA1 dans 60 % des cas et ASA2 dans 30 % des cas. La technique anesthésique proposée était la péribulbaire dans 84,2 % des cas, et l'anesthésie générale dans 15,8 % des cas. Une consultation spécialisée en pédiatrie a été demandée pour 2 % des patients, 1,30 % en diabétologie et 1,20 % en cardiologie. Dans de nombreux cas, la consultation d'anesthésie nous a permis de suspecter un diabète ou une hypertension chez les patients et de les orienter pour un traitement.

Mot-clés : Pré-anesthésique, Ophtalmologie, ASA, Mali.

Abstract

Postoperative pain is predictable and therefore preventable; its management should be a priority. Posterior segment surgery is an underestimated source of pain. The objective of this work is to highlight the intensity of postoperative pain in this type of surgery. This was a 6-month prospective descriptive longitudinal study. Involving 67 patients operated for a pathology of the posterior segment. The simple verbal scale was used to assess pain in the postoperative period at H0, H8, H16 and H24. During the period, posterior segment surgery accounted for 1.88% of the institute's surgical activities. Male predominates with 88%; The mean age was 45.7 years with extremes of 7 and 75 years, vitrectomy accounted for 71.6% and scleral cryoindentation 28.4%. Peribulbar anaesthesia combining bupivacaine and xylocaine was the most commonly used with 80.6%. Intravenous injection of morphine intraoperatively was associated with peribulbar anesthesia in 19.4% of cases of scleral cryoindentation. In the immediate postoperative period (H0), pain was intense in 37%, moderate in 52% and low in 11% of patients after cryoindentation while it was absent in 52% and low in 48% of patients after vitrectomy. At H8 and H16, severe pain was reported in 47% of cryoindentations; It was reported as weak to moderate after vitrectomy in 91.66%. At H24, after treatment, patients had moderate pain in 69%, and low pain in 31% after cryoindentation; It was low in 85.71% after vitrectomy. This work allowed us to highlight the feelings of patients operated on in the posterior segment and to propose a postoperative management protocol.

Keywords: Pain, posterior segment, locoregional anesthesia, Verbal scale.

Introduction

According to the WHO, pain is an unpleasant sensory and emotional experience, in response to actual or potential tissue damage or described in these terms.» The feeling of pain varies from one patient to another;

It is therefore necessary to evaluate it individually [1]. Postoperative pain is predictable, and therefore preventable; Its management is one of the public health priorities [2]. The vast majority of ophthalmological surgery is done on an outpatient basis. Surgery of the posterior segment of the eye is a major surgery, it is ab externo surgery (scleral cryoindentation), endocular surgery (simple vitrectomy and complex vitrectomy) [3]. The incidence of retinal detachment is 1 in 10000 cases, affecting both sexes equally, with a peak around sixty in the United States [4]. In France, its annual incidence is estimated at about 10 per 100,000 inhabitants [5] Its incidence is not well known in Africa, but it is considered rare [4, 5, 6].

One of the indications for vitrectomy is vitreous hemorrhage, a serious pathology due to its impact on visual acuity with a frequency of 7/100,000 inhabitants per year [7, 8, 9]. These surgeries are more or less painful; The examination is done on D1 postoperatively after examination. This innovative mode of hospitalization is an alternative to conventional hospitalization [10, 11]; It allows pain management over 24 hours. In our context, posterior segment surgical interventions are mostly performed under peribulbar anesthesia combined with parenteral multimodal analgesia. Peribulbar anesthesia is currently the most widely used ALR technique in ophthalmology because of its low risk of accident. It is used almost systematically for anterior and posterior segment interventions in adults. It produces anesthesia, akinesia, analgesia, and IOP control. The duration of action varies between 1 and 3 h depending on the protocol used [12].

The aim of this work is to highlight the intensity of pain and its management in posterior segment surgery.

Methodology

This was a descriptive, prospective study over a period of 6 months from January 1, 2023 to June 30, 2023 on all patients operated on the posterior segment during the period, placed under observation for 24 hours and consenting. The Simple Verbal Scale (SVE) was used

to assess pain due to low vision. Data collection was done by an exhaustive census of all patients on an individual survey form. The SPSS 23.0 software was used for data capture and analysis. The processing of the texts and tables was carried out with Word and Excel 2016 software

Pain was assessed in patients immediately postoperatively, and every eight hours for up to 24 hours. In the absence of pain: no analgesic; low pain and moderate pain: Paracetamol 15mg/kg; severe pain: Paracetamol 15mg/kg + Tramadol 1 to 2mg/kg; Extreme pain: Morphine titration.

Results

Over a period of 6 months, we collected 67 patients operated on the posterior segment out of 3570 interventions performed, i.e. a rate of 1.88%. The male sex predominated with 88.10% against 11.90% of women, i.e. a sex ratio of 7.37; the mean age was 45.7 with extremes of 7 and 75 years; Patients over 60 years old were in the majority with 32.84% while the age groups of 1 and 20 years represented, 14.92%, 20 and 40 years old 25.37%, 40 and 60 years old 26.87%. Hypertension was the most common medical history with 20.9%, followed by asthma, diabetes, SC sickle cell disease, and eye trauma each at 3%. Cataract surgery was the most represented surgical history with 29.9%, followed by digestive surgery with 11.9%. Vitrectomy was the most represented operative indication with 71.6%, followed by scleral cryoindentation 28.4%. Patients were classified as ASA1 in 65.7% and ASA2 in 34.3%.

Table I: Distribution of patients according to anaesthesia technique.

Anaesthesia technique	Staff	Percentage
APB	54	80,6
APB, Morphine	12	17,91
AG	1	1,49
Total	67	100,0

The APB alone was the most achieved with 80.6%.

Table II: Distribution of patients by duration of intervention.

Duration of intervention	Actual	Percentage
< 30	9	13,43
[30 – 60[37	55,22
[60 – 90[10	14,93
[90 – 120[9	13,43
>120	2	2,99
Total	67	100

More than half of our interventions were carried out between 30 minutes and an hour, i.e. 55.22%.

Table III: Distribution of patients by postoperative pain at H0 and operative indication.

Pain at H0	Surgical indications		Total
	Scleral cryoindentation	Vitrectomy	
Absent	0	25 (37,31)	25 (37,31)
Weak	2 (2,99)	23 (34,33)	25 (34,33)
Moderate	10 (14,93)	0	10 (14,93)
Intense	7 (10,45)	0	7 (10,45)
Total	19 (28,36)	48 (71,64)	67 (100)

In the cryoindentation series, pain was moderate in 10/19 (52.63%); intense in 7/19 (36,84) of cryoindentations. It was mild to moderate in the vitrectomy series.

Table IV: Distribution of patients according to H8 postoperative pain and operative indication

Pain at H8	Surgical indications		Total
	Scleral cryoindentation	Vitrectomy	
Absent	0	4 (5,97)	4 (5,97)
Weak	4 (5,97)	38 (56,72)	42 (62,69)
Moderate	6 (8,96)	6 (8,96)	12 (17,91)
Intense	7 (10,45)	0	7 (10,45)
Very intense	2 (2,99)	0	2 (2,99)
Total	19 (28,36)	48 (71,64)	67 (100)

At H8 postoperatively, pain was intense to very intense in 9/19 patients (47%) in the cryoindentation series while it was low in the vitrectomy series.

Table V: Distribution of patients according to postoperative pain at H24 and operative indication.

Pain at H24	Surgical indications		Total
	Scleral cryoindentation	Vitrectomy	
Absent	0	2 (2,99)	2 (2,99)
Weak	6 (8,96)	42 (62,69)	48 (71,64)
Moderate	13 (19,49)	4 (5,97)	17 (25,93)
Total	19 (28,36)	48 (71,64)	67 (100)

Pain was mild to moderate at H16 and H24 in all patients after management

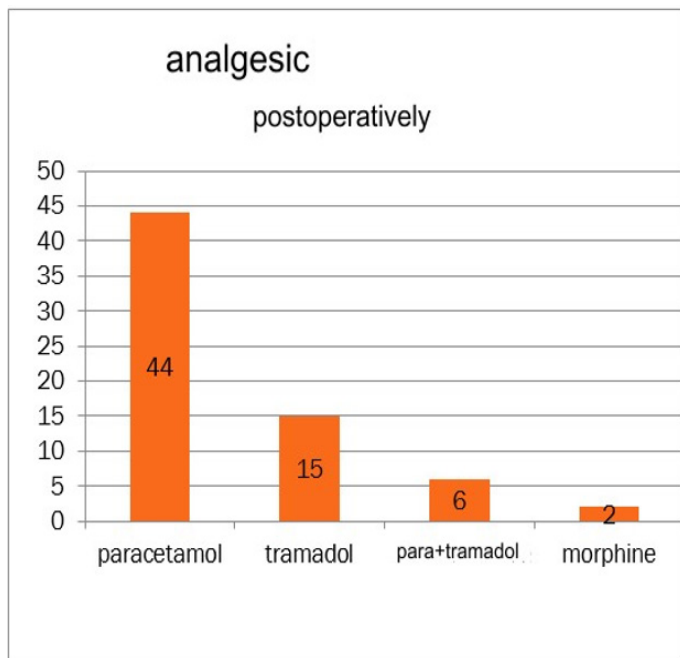


Figure 1: Distribution of patients according to the most commonly administered analgesics postoperatively.

Discussion

Our hospital frequency of patients operated on the posterior segment at the CHU-IOTA was 1.88%; this relatively low frequency could be explained by the number of patients who consult, the frequent shortage of consumables for posterior segment interventions. The male sex represented 88.10%, a ratio of 7.38 in favor of men. This male predominance is found by Seck et al [13] in Senegal and by Nwosu et al [14] in Nigeria. On the other hand, in the Tanihara series [15] in Japan and the Wilkinson series [16] in the USA,

a female predominance was reported in posterior segment surgery. The mean age of our patients was 45.7 years with extremes of 7 and 75 years. This result is comparable to that of Kaimbo [17] who reported an average age of 47 years. Ross W et al. [18] reported an average age of 60 years in their study. These studies highlight that pathologies of the posterior segment of the eye concern all age groups. Hypertension was the most common history with 20.9%, followed by diabetes and sickle cell anemia with 3% each. Dureau P et al [19] found in their study 17% for diabetes and 18% for sickle cell anemia as risk factors in posterior segment surgery, in this case tractional retinal detachment. Cataract surgery with 29.9% was the most predominant surgical history. In Sussking's studies. D [20], The increase in pseudophakic retinal detachment was related to cataract surgery. Indeed, the extraction of the lens and its replacement by a thinner artificial lens leads to an expansion of the vitreous cavity and its displacement anteriorly [21]. Posterior segment surgeries in our study were for vitrectomy with 71.6% and scleral cryoindentation with 28.4%. On the other hand, A. Guindo et al [26] found in their study 81.71% of scleral cryoindentation intervention and 18.29% of simple vitrectomy. The ASA 1 score was the most represented with 65.7% and ASA 2 with 34.3%. ASA2 had other associated pathologies (hypertension, diabetes, etc.). Indeed, this score makes it possible to evaluate the anesthetic risk, severity score and to obtain a predictive parameter of intraoperative mortality and morbidity [22]. Peribulbar anaesthesia combining bupivacaine and xylocaine was the most commonly used with 80.6%. Intravenous injection of morphine intraoperatively was associated with peribulbar anesthesia in 19.4% of cases of scleral cryoindentation. In the study conducted by A Razzack et al [23], vitrectomy retinal surgery was most often performed under local anesthesia worldwide (APB). In contrast to that of Licina A, [24] states that with the aging of the overall population, as well as an increase in the frequency of diabetes, vitrectomy is a procedure increasingly performed under general anesthesia.

The duration of the procedure was 30 to 60 minutes in 55.22% of patients, the mean duration of scleral cryoindentation was 65 minutes with extremes of 55 and 120 minutes while that of vitrectomy was 32 minutes with extremes of 19 to 60 minutes, which is close to the results of A Razzack et al [23] which had a duration of 30 to 60 minutes for vitrectomy and 60 to 90 minutes for vitrectomy. scleral cryoindentation. At H0, 36.8% of our patients reported severe pain after scleral cryoindentation while it was described as mild to absent in all patients after vitrectomy. This assessment was done immediately after the end of the surgery. From this result, we deduce that pain remains weak to absent after vitrectomy, which is in line with Martiano's study. D [25], who found that pain was rare in vitrectomy but is not excluded. At H8, the data collected showed that post-cryoindentation pain was reported intense to extreme in 47.36% of patients; it was moderate to low in 52.63%. While in vitrectomy, it was low at the same time in 79.16% of patients. A Razzack et al [23] reported that pain was more intense in recovery in case of cryoindentation than in case of vitrectomy. At H16, pain intensity was moderate in 78.94% of patients operated after cryoindentation. While it was low in 83.33% of patients after vitrectomy. This corroborates the words of F.metge-Galatoire [26], pain is always present in cryoindentation and in vitrectomy. At H24, 87.5% of patients after vitrectomy had mild pain; 76.47% of patients operated by scleral cryoindentation had moderate pain. After each pain assessment, paracetamol was administered for mild and moderate pain, a combination of paracetamol plus tramadol for severe pain, morphine titrated and then as a bolus every 6 hours for extreme pain. This protocol made it possible to effectively manage patients' pain. The pain was intense or even extreme after scleral cryoindentation; it was mild to moderate after vitrectomy. Peribulbar anesthesia + sedation required for Cryoindentation, Peribulbar anesthesia combining bupivacaine and xylocaine for Vitrectomy

- Paracetamol oral for vitrectomy every 06 hours
- Combination level I and II or Morphine IV every 06H for Cryoindentation.

Conclusion

Recognising pain and assessing its intensity are part of a systematic care approach. Listening, helping and supporting the entire medical and paramedical team are concerned. Everyone, according to their function, must know how to recognize, evaluate pain or a painful situation and transmit the information.

This work has allowed us to highlight the feelings of patients operated on the posterior segment and we propose a protocol for postoperative pain management with regard to posterior segment surgery.

The first evaluation serves as a reference for the improvement or aggravation of pain. Reassessments make it possible to adapt a treatment as closely as possible to the needs and thus testify to quality care.

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Conflicts of interest : None

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