

Research Article

# Evaluating the Surgical Treatment of Mechanical Icterus in the General Surgery Department of the Hopital Ntional Ignace Deen, Chu De Conkry

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## Abstract

**Introduction:** The aim of this study was to report our experience in the surgical management of mechanical jaundice. **Methods:** This was a 10-year retrospective descriptive study (January 2011 to August 2022), carried out in the general surgery department of the Hôpital National Ignace Deen. Patients admitted for surgery for mechanical jaundice were included. **Results:** We collected 22 cases of mechanical icterus out of a total of 4739 surgical procedures performed during the study period. The mean age was 46 years, with extremes of 9 and 80 years. All our patients were seen at the frank icterus stage. Ultrasound was performed in all patients. Etiologies were dominated by tumors of the pancreatic head (54.54%), and lithiasis of the main bile duct (18.18%). The average consultation time was 5.04 months, with extremes of 9 years and 80 years. Cholecystectomy was performed in over half the cases (54.54%), including three cases associated with stone extraction (13.63%). Bilio-digestive shunts were performed in 11 cases (50%), of the choledochoduodenal (13.63%) and cholecysto-jejunal (13.63%) types. Post-operative management was straightforward in 81.81% of cases, with 4 deaths (18.18%). **Conclusion:** Palliative bypass, due to the delay in consultation, allows remission of the signs of cholestasis, but does not change the natural course of the pathology. Mortality depends on the etiology.

## Keywords

Mechanical Icterus, Tumors, Lithiasis, Surgery, Biliary-Digestive Shunt

## 1. Introduction

Mechanical jaundice is a clinical condition characterized by yellow discoloration of the skin and conjunctivae, associated with increased blood bilirubin levels secondary to an

obstruction to the free flow of bile, located in any part of the main bile duct [1].

The causes of mechanical jaundice are many and varied, the

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main ones being lithiasis of the main bile ducts and tumours such as: cancer of the head of the pancreas, cholangio-carcinoma, ampullary tumour or Watherian ampulloma, or other localisations with compression of the bile ducts [2].

Although tobacco and alcohol consumption were more frequently encountered in several studies such as ours, their role as a risk factor is not well established in the pathogenesis of pancreatic cancer [3].

In black Africa, lithiasis of the main bile duct (LVBP) remains the subject of controversy concerning its diagnosis and, above all, its treatment. While in developed countries, it can be treated entirely by laparoscopy, in our country its treatment remains for the time being "classic", i.e. entirely carried out by laparotomy [11].

Diagnosis of the tumour processes responsible for the onset of mechanical jaundice is difficult in the early stages, during which surgery can be expected to produce satisfactory results and a good prognosis. Because of their long latency, these tumors are very often discovered at an advanced stage when curative resection is not possible, and when only palliative treatment can be envisaged [5].

In a context of limited resources, such as ours, where there is no endoscopic or radio-interventional alternative, bypass surgery constitutes the mainstay of this palliative therapy. It improves patient comfort by eliminating mechanical and/or algesic complications, but in no way alters the natural course of the disease [2].

Exceptional in developed countries, due to early consultation and sometimes asymptomatic discovery, with the possibility of curative resection [1].

The aim of this study was to report on our experience in the surgical management of mechanical jaundice.

## 2. Material and Methods

This was an 11y 8m retrospective descriptive study, from January 2011 to August 2022. It was conducted in the General Surgery Department of the National Ignace Deen Hospital, CHU Conakry. All complete records of patients admitted for surgery for mechanical jaundice were included. Other causes of non-mechanical and non-operated mechanical jaundice were excluded.

Parameters studied included frequency, socio-demographic profile, clinical, therapeutic and prognostic aspects.

## 3. Results

During the course of the study, we identified 48 patient

files representing (1%) of all the department's activities.

The mean age was 46 years, with extremes of 9 and 80 years, and a sex ratio of 1.44 in favor of men. The 20-40 age group was the most represented (40.46%).

More than half the patients lived in urban areas (59.09%).

Table 1 shows the distribution according to the frequency of clinical signs.

The average consultation time was 5.04 months, with extremes of 21 days and 2 years. The majority of patients were seen between 3 and 6 months (45.45%).

Abdominal ultrasound was performed in all our patients (100%), and only three patients underwent CT scanning (13.63%).

The etiology of mechanical jaundice was tumour of the pancreatic head in more than half the cases (54.54%), and lithiasis of the main bile duct in 4 cases (18.18%), as shown in Table 2, and we have grouped the surgical procedures in Table 3.

Bilio-digestive bile duodenal and cholecysto-jejunal shunts were performed in 3 cases each (13.63%), while the other shunts are shown in Table 4.

We achieved remission of cholestasis in 18 patients (81.81%) and recorded 4 deaths (18.18%). The average length of stay was 20.90 days, with extremes of 7 days and 30 days. The majority of patients spent 21 to 30 days in hospital.

**Table 1.** Frequency of reasons for consultation.

Functional signs	Number (N= 22)	Percentage
Conjunctival jaundice	22	100,00
Abdominal pain HCD	19	86,36
Pruritus	12	54,54
Discolored stools	10	45,45
Dark urine	9	40,90
Vomiting	4	18,18
Nausea	3	13,63
General signs		
Anorexia	11	50
Physical asthenia	10	45,45
Weight loss	8	36,36
Fever	5	22,72
Insomnia	3	13,63

**Table 2.** Distribution of mechanical icterus by etiology.

Etiologies	Number (N=22)	Percentage
Pancreatic head tumor	12	54,54
LVBP	4	18,18
Liver tumor	2	9,09
Vesicular tumor	3	13,63
Hydrocholécyste	2	9,09
Liver metastases	3	13,63
VBP ganglion	1	4,54

**Table 3.** Distribution by surgical procedure.

Procedures	Number (N=22)	Percentage
Biliodigestive diversions	14	63,64
Cholécystectomy	12	54,54
Duodenostomy + stone removal	1	4,54
Laparotomy + lymph node removal	1	4,54

**Table 4.** Distribution by digestive bypass type.

Type of bypass	Number (N= 22)	Percentage
Cholecystic duodenal	3	13,63
Cholecysto-jejunal	3	13,63
lateral cholecysto-jejunal + gastro-jejunal shunt	2	9,09
Cholecojejunal drains (one Kehr and one tubular) + gastrojejunal	2	9,09
Hepaticojejunal + gastrojejunal	2	9,09
Hepaticojejunal + gastrojejunal	1	4,54
Hépatico-iléale latéro-latérale + jéjuno-iléale	1	4,54

## 4. Discussion

The frequency of mechanical jaundice recorded in our study was similar to that reported in several African series, at around 1% [3-5].

This frequency is much higher in Western and Maghrebian countries, varying around 2% [6, 3].

This low frequency undoubtedly does not reflect the exact scale of the problem, given that recruitment was only carried out in the General Surgery Department of the Hôpital National Ignace Deen, and that socio-cultural prejudices mean

that many patients prefer to be treated with traditional medicine, as they say that injection during jaundice leads to death.

The predominance of young adult males reported in the literature was found in our series [7, 6, 2, 8]. Exposure to risk factors such as tobacco and alcohol are common during this period of life, and are responsible for the early onset of tumours, particularly those of the head of the pancreas. This is not the case for lithiasis of the main bile duct, where the data in the literature are in line with those found in our series [7, 10].

The average consultation time varies from one study to another. Bambara AT et al [3] in Mali reported an average

delay of 6 months, and Sidibé BY et al [10] noted 4 months in Mali.

Low-income countries such as ours face many challenges linked to a lack of material, financial and human resources, resulting in long therapeutic itineraries for patients.

Conjunctival jaundice, the main reason for consultation encountered in all our patients, is at first sight considered to be a medical jaundice and for a long time treated as such. Mouagit O et al [6] in Morocco and Imorou SI et al [11] each reported 100% conjunctival jaundice.

Diagnosis was made by ultrasonography, still considered in countries like ours as the first-line examination performed in all our patients [7, 9]. The lack of CT scans is thought to be due to the high cost in relation to the population's income. Mouagit O et al [6] reported that 100% of their patients underwent CT and 52.9% underwent ultrasound. Wals C [1] in Paris, investigating the diagnostic accuracy of CT and echendoscopy (EE) in predicting non-resectability, reported (100%) for CT and (86%) for EE.

The absence of laparoscopy in our country has led to laparotomy, even for lithiasis where it is the primary indication. We performed (63.64%) biliodigestive diversions, (54.54%) cholecystectomies, one case of duodenostomy plus stone extraction, and one case of laparotomy for two retro choledochal ganglions compressing it.

Open cholecystectomy was systematic whenever the gallbladder was not used for shunting [9, 13]. There is no consensus, however, as those in favor of avoiding this procedure cite the longer operating time in patients who are often in poor general condition, as well as the risk of vesicular bed haemorrhage due to impaired haemostasis. Malki HO et al [12] reported (86.3%) biliodigestive shunts, Sidibé BY et al [10] reported (51.32%) shunts in 78 patients, and duodeno-pancreatectomy in 15 patients (9.87%).

Among the types of shunts, Tchangai et al [8] reported (81.1%) hepaticojejunal anastomoses, (8.1%) choledochoduodenal anastomoses associated with gastrojejunostomy. Imorou SI et al [11] reported 26 cases of choledochoduodenal anastomoses (83.8%), two cases of choledochojunal anastomoses (6.5%), associated with gastrojejunostomy (n=28).

We performed 13.63% (n=3) choledochodenal and cholecysto-jejunal anastomoses each; 9.09% (n=2) anastomoses (lateral-lateral cholecysto-jejunal, hepatico-jejunal), two cases of choledoch-jejunal anastomoses (one by Kehr drain, the other tubular) associated respectively with a gastro-jejunostomy; 4.54% of anastomoses (hepatico-ileal latero-lateral associated with a jejuno-ileostomy and a cholecysto-duodenal associated with a gastro-jejunostomy), each.

It emerges that, in Africa as elsewhere, the choice of treatment varies according to the technological environment and the qualifications of human resources. However, results were similar in terms of post-operative mortality and morbidity, as well as secondary complications [13].

The post-operative course was straightforward, with signs

amending in 81.81% of cases. We recorded 4 deaths (18.18%), all due to pancreatic head tumors. The average length of stay was 21 days, with extremes ranging from 7 to 30 days.

## 5. Conclusion

The seriousness of mechanical jaundice is due both to the variety of etiologies involved and to its late discovery, which contraindicates excision. Bypass surgery can alleviate signs of cholestasis, but does not alter the natural course of the disease. Post-operative mortality is a function of the etiology and the delay in consultation. Hence the importance of raising awareness of the need for early medical consultation and management.

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

- [1] Valls C. Naked jaundice: role of the radiologist in diagnostic and therapeutic management. *J Radiol* 2006; 87: 460-78.
- [2] Touré A, Diallo AT, Soumaoro IT, Touré BF, Diallo A, Camara N D. Cholestases extra hépatiques, état actuel de la prise en charge dans le service de chirurgie générale de l'Hôpital National Ignace Deen, Conakry Guinée. *J Afr Chir Digest* 2007; 7(2): 691-696.
- [3] Tchangai B, Tchaou M, Darre T, Alassani F, Dosseh ED, Attipou K et al. Indications and results of palliative surgery for pancreatic cancers at CHU Sylvanus Olympio. *Journal of Surgery* 2022; 10(1): 34-39.
- [4] Mouagit O, El Alami F, Chourak M, Ouanani M, El Absi M, Echarrab M et al. Pancreatic head cancer seen in the emergency department: clinical and therapeutic aspects. *J. Afri Cancer* 2009; 1: 217-222.
- [5] Coulibaly S, Kéita K, Sissoko S. B, Diallo M, Touré M, Sidibé S. Apport de l'échographie dans la prise le diagnostic des tumeurs du pancréas au Service de Radiologie du CHU du Point G. *J Afr Imag Méd* 2013; 5(3): 164-172.
- [6] Bambara AT, Zida M, Ouangré E, Bambara AH, Zongo N, Traoré SS et al. Pancreatic head tumors: a diagnostic and therapeutic challenge in Ouagadougou. *J Afr Cancer* 2014; 6: 17-21.
- [7] Bellamlih H, Bouimetarham L. Mirizzi syndrome, a rare cause of biliary tract obstruction: about a case. *Revue de littérature* 2017; 27: 45-69.
- [8] Kpoussou AR, Gbessi DG, Freddy F. Cancers of the pancreas at the National Hospital and University center of Cotonou: epidemiological, diagnostic, and prognostic features. *Pan Afri* 2021; 39: 18.

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- [9] Ariane Vienne, Olivier Oberlin, Stanislas Chaussade, Bertrand Dousset, Frédéric. Prat Neoplastic icterus: for or against pre-operative biliary drainage. *Cancéro dig.* 2010; 3(2): 1-10.
- [10] Sidibé BY, Dembélé BT, Bah A, Maiga A, Coulibaly A, Traoré A et al. Biliodigestive diversion in palliative surgery for pancreatic head cancer at CHU Gabriel Touré. *Mali médical* 2018; 23(3): 29-32.
- [11] Souaibou I Y, Gnagnon FHR, Seto DM, Lawni I, Attolou GR, Natta NH et al. Palliative surgery of presumed pancreatic head cancers: our experience at cnhuhkm Cotonou (Benin). *J Afr chir digest* 2018; 18(1): 2354–2358.
- [12] Koffi E, Yenon K, Ehua S, Coulibaly A, Kouassi JC, Kanga M et al. Main bile duct lithiasis in the Ivorian environment *Médecine d'Afrique Noires*, 1999; 46(2): 114-119.
- [13] Baumel H; M. Huguier: Le cancer du pancréas exocrine: diagnostic et traitement. Report presented at the 93rd French congress of surgery. *J Afri du cancer* 2009; 1: 212-216.