



TO COMPARE THE EFFICACY OF SILVER NITRATE VERSUS POVIDINE IODINE IN ENDOSCOPIC MANAGEMENT OF CHYLURIA

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ABSTRACT **BACKGROUND** Chyluria is defined as the passing of milky-looking white urine caused by the presence of chyle, which is made up of albumin, emulsified fat, and fibrin in various amounts and absorbed by intestinal lacteals. It's linked to remissions and exacerbations on its own. Renal pelvic instillation sclerotherapy (RPIS) is commonly used to cause sclerosis of pyelolymphatic fistulae in individuals who do not respond to conservative care. **AIMS AND OBJECTIVES** :To compare the efficacy and outcome of silver nitrate versus povidone iodine endoscopic management of chyluria. **METHODOLOGY** 50 patients having chyluria and who fulfilled the criteria were included in the study. 25 patients received a 0.2 percent povidone iodine instillation in the renal pelvis and 25 patients received RPIS with 0.5 percent silver nitrate. For a period of 30 days, the patient was assessed for improvement or cure of chyluria, as well as any side effects from management and any recurrence. **CONCLUSION** Single dose instillation of 0.2% Povidone iodine sclerotherapy is a effective, remarkably safe, inexpensive than 0.5% silver nitrate

KEYWORDS : RPIS, pyelolymphatic fistula, silver nitrate

INTRODUCTION

Chyluria is defined as the passing of milky-looking white urine caused by the presence of chyle, which is made up of albumin, emulsified fat, and fibrin in various amounts and absorbed by intestinal lacteals. It's linked to remissions and exacerbations on its own. It's a chronic disorder caused by aberrant pyelolymphatic communications readings in response to chyluria material passing through the urine. The symptoms frequently appear suddenly and predominantly affect young individuals. Although rarely life threatening, it frequently causes morbidity due to symptoms such as hematochyluria and colics. In addition, it causes dietary deficit and compensated immunosuppression. In most situations, a high-protein, low-fat diet is recommended, although it is only helpful in a small number of patients, whereas antifilarial medicines are used in the majority of cases. Renal pelvic instillation sclerotherapy (RPIS) is commonly used to cause sclerosis of pyelolymphatic fistulae in individuals who do not respond to conservative care.

Wood observed the absence of chyluria after retrograde pyelography in 1929.

Since then, many sclerosing drugs have been utilised to treat chyluria. Although silver nitrate is a regularly used agent, it has been linked to catastrophic effects including death. Because of the adverse effects of silver nitrate, researchers are looking for a safe but effective sclerosing agent. Povidone iodine has been demonstrated to be an effective and safe sclerosing agent in the treatment of chyluria. In this paper, we describe our experience with instilling povidone iodine and silver nitrates into the renal pelvis to treat chyluria.

AIMS AND OBJECTIVE

1. To compare the efficacy of silver nitrate versus povidone iodine endoscopic management of chyluria.
2. To compare the side effects of silver nitrate and povidone iodine in endoscopic management of chyluria.
3. To evaluate and compare the rate of recurrent of chyluria in patients managed endoscopically by silver nitrate and povidone iodine.

MATERIAL AND METHODS

The study would be conducted in the department of general surgery, LLR & Associated Hospitals, GSVM Medical College, Kanpur from January 2020 to October 2021 in all patients of chyluria who would be admitted in our ward.

Criteria for selection of patients will be based on—\

Inclusion criteria

1. Age group 18 to 60 yrs.
2. Patients planned for endoscopic management of chyluria by

povidone iodine 0.2% or by silver nitrate 0.5%.

Exclusion criteria

1. Pediatric and geriatric (extreme of age) age group.
2. Pregnant and lactating female
3. Patients with immunocompromised status.
4. Patient who do not wish to participate in the study and refuse informed participation consent.
5. Any loss to follow up of consenting subject who decide to leave the study mid way.

Study type Prospective Randomized Trials

Study design Prospective study with parallel study group (no cross over) single blinded.

Period of follow up 30 days

OBSERVATION

A Total of 50 patients were included in this study.

Table 1. distribution of patient according to sex

Gender	Patient	Percentage
Male	28	56%
Female	22	44%
Total	50	100%

In our study, Of the total 50 patients Females – 22 patients (44 %) Male – 28 patients (56 %). The sex incidence ratio was almost male:female 1.2: 1.

Table 2. distribution of patient according to age group

Age group	No of patient	Percentage
<20	0	0%
20-30	3	6%
30-40	13	26%
40-50	12	24%
50-60	22	44%

In our study maximum patient was of fifth decade. (44%) .13 out of 50 patient belongs to 30-40 year group .

Table 3. Distribution of patient according to complaints

Symptoms	Patient	Percentage
Chyluria	50	100%
Hematochyluria	5	10%
Passing of chyle clot	10	20%
Obstructive urinary symptoms	3	6%

Acute retention	3	6%
UTI	3	6%
H/O Filarial limb or scrotal filariasis	0	00%

Chyluria is the most common presenting symptom in our patients.

Five individuals had haematochyluria, and ten patients had a history of passing chylous clots. In three cases, obstructive voiding symptoms were discovered.

In three cases, acute urine retention was discovered.

Only three of the 50 patients developed UTI, and none of them had filarial limbs.

Table 4 COMORBIDITY DISTRIBUTION

Comorbidity	Patient	%
Diabetes	10	20%
Hypertension	7	14%
h/o allergy	3	6%
Obesity	3	6%

Out of the 50 patients 10 were diabetic, 7 were hypertensive and 3 were obese.

Table 5 Previous medical treatment for Chyluria

	No of Patient	%
DEC	7	14%
No DEC	43	86%

In our study 7 patient have taken treatment of diethylcarbamazine.

Table 6 Distribution according to side

	No of patient	%
Right side	14	28%
Left side	20	40%
Bilateral	16	32%

Cystoscopy/ureteroscopic findings chylous efflux on the right side - 14 cases chylous efflux on the left side - 20 cases chylous efflux bilateral - 16 cases

Table 7 distribution of patient according to povidine iodine group and silver nitrate group

	No of patient	Percentage
Povidine iodine group	25	50%
Silver nitrate group	25	50%
Total	50	100%

Out of 50, 25 patient was managed with povidine iodine RPIS and 25 patient was managed with 0.5 % silver nitrate instillation.

Table 8 early post op complication

Post op complication	Povidine iodine	Silver nitrate group
Flank pain	13	18
Nausea/vomiting	10	16
Fever	03	07
Allergic reaction	02	16
Retention of urine	01	02
Acute cystitis	00	03
Acute renal failure	00	01
Acute pyelonephritis/renal abscess	00	01

In the first 24 hours after surgery, almost 62 percent of patients experienced flank pain which was treated with analgesics. The silver nitrate RPIS group had a higher rate of anaphylaxis (64%) than the povidine iodine group After receiving sclerorant, 26 out of 50 patients develop nausea or vomiting.

Urine retention was observed in three patients after surgery (1 in the povidine iodine group and 2 in the silver nitrate group).

The silver nitrate group had acute cystitis(3), acute pyelonephritis(1), and acute renal failure(1)

Table 9 late post op complication

	Povidine iodine	Silver nitrate group
Urethral stricture	00	01
Obstructive uropathy	00	01
PUJ obstruction	00	00

In our study , only 2 patient of silver nitrate group presented to our side with complication . 1 have urethral stricture on CT IVP and one have obstructive uropathy . no patient have PUJ obstruction during our study period .

Table 10 response rate according to the procedure

	Response rate	Response %
Povidine iodine group	18	72%
Silver nitrate group	19	76%

Disappearance of chyle after 3 weeks of Povidone Iodine or silver nitrate instillation was noted as response . In our study , povidine iodine group have 72% response rate whereas silver nitrate group have 76% response rate .

Table 11 failure rate according to the procedure

	Failure	Failure %
Povidine iodine group	07	28%
Silver nitrate group	06	24%

In our study , povidine iodine group have 28% failure rate whereas silver nitrate group have 24% failure rate .

DISCUSSION

Chyluria is most common between the second and fifth decades of life, according to Yamauchi. Out of 50 patients in our study, 28 were in their second to fifth decade of life. (56 percent). There is no sex predominance, according to Torres and colleagues.

Out of the 50 patients in our study, 22 were female and 28 were male. The sex incidence ratio was 1.2: 1, which was similar to the studies cited above. In five patients, Shanmugam administered a single instillation of 2% povidone iodine and there was no recurrence after six months. In chyluria patients, Singh looked at two different dose schedules. The first regimen involved an 8hour instillation of povidone iodine for three days (a total of nine) while in the second protocol weekly instillation of the povidone iodine was done for 6 weeks. The trial enrolled a total of 27 participants in the first and 25 in the second protocol. There was an 85 percent response rate with a mean diseasefree duration of 27 months after a median follow-up of 32 months in the 8 h instillations group. A response rate of 75% with a diseasefree period of 22 months was seen in the weekly instillation group.

Shailendra tested the efficacy and toxicity of 1 percent silver nitrate, 0.2 percent povidone iodine, and 50% dextrose as RPIS for treating chyluria in a randomised prospective and comparative trial. Because of its poor success, the dextrose treatment was stopped in the middle. In this study, 44 patients were given silver nitrate and 41 were given povidone iodine; both groups were well-matched, and the average follow-up was 28.4 and 23.3 months, respectively. After the first course of RPIS, after silver nitrate and povidone, respectively, 'immediate clearance' was recorded in 91 percent and 98 percent of patients; and recurrence in 21 percent and 22 percent of patients; Kaplan-Meier estimates of 'disease-free duration' in the two groups (23.6 vs 20.1 months) were also similar (P=0.7906).

After two courses of RPIS, the cumulative success rate was 82 percent (silver nitrate) and 83 percent (povidone; P = 1.0). During treatment, five patients (11%) in the silvernitrate group and one (2%) in the povidone group experienced considerable flank pain.

He concluded that Povidone iodine 0.2% is as effective for RPIS as 0.5% silver nitrate. In our study 0.2 % Povidne iodine concentration had a Success rate of 72% in single setting RPIS with post operative pain as immediate Complication (52.33 %) with failure rate of 28 % . With 0.5% silver nitrate single setting RPIS the Success rate was 76 % with failure rate 24% . this also suggest that Povidone iodine 0.2% is as effective for RPIS as 0.5% silver nitrate.

The manifestation of chyluria depends upon the site of involvement and the anastomotic variation of lymphatic system in the individual patient. The anastomotic variation primarily occurs at the cisterna chyli where the lumbar trunks and intestinal trunks join.

Only approximately 47% of healthy people have the traditional cisterna chyli, and the intestinal trunk drains into the lumbar trunks on one side or directly into the thoracic duct, either as a single trunk or as numerous smaller ones. This could explain the appearance of unilateral chylous oedema or unilateral chyluria in one extremity. On the left side, unilateral findings are more typical. In our 50-case analysis, 14 instances had chylous efflux on the right side, 20 cases on the left, and 16 cases had bilateral efflux, with a ratio of Right: Left 1: 1.42 and a little shift to the left side.

Conclusion

From January 2020 to October 2021, all patients with chyluria were studied in the department of general surgery, LLR & Associated Hospitals, GSVM Medical College, Kanpur. We put the patients into two groups of equal size. 25 patients received a 0.2 percent povidine iodine instillation in the renal pelvis and 25 patients received RIPS with 0.5 percent silver nitrate. For a period of 30 days, the patient was assessed for improvement or cure of chyluria, as well as any side effects from management and any recurrence occurrences.

With the results of the above study, we conclude

- 1- Single dose instillation of 0.2% Povidone iodine sclerotherapy is a remarkably safe, inexpensive than 0.5% silver nitrate.
- 2- Povidone iodine 0.2% is as effective for RPIS as 0.5% silver nitrate
- 3- povidone iodine RIPS is effective minimally invasive procedure and can be done on day care basis. However, further comparative studies are needed to establish its efficacy better.

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