

# Evaluation and Management of Primary Varicose Veins of Lower Limb in A Tertiary Care Centre

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## Abstract

**Introduction:** Incompetent valves of deep, superficial or perforating veins lead to varicose veins. Dilated, elongated or tortuous subcutaneous veins of lower legs are a manifestation of increase in venous pressure. This increase in venous pressure results from the reflux of blood due to incompetence. The diseased Great Saphenous Vein (GSV) is removed by High Saphenous Ligation and Stripping (HLS) surgery. **Aims and Objectives:** To study the clinical and socio-demographic profile, precipitating factors/ risk factors, complications and clinical outcomes of management of varicose veins. **Material and Methods:** Data collected from 150 patients with varicose veins by appropriate history taking and clinical examination, relevant radiological and laboratory investigations and follow-up of cases to study the clinical outcome. **Results:** Study was conducted with 150 patients. Most common age group affected with primary varicose veins was between 41-60 yrs of age with male predominance (64.7%). Most of the cases in present study were engaged in work involving long standing hours i.e. farming (34%) and housewives (28%). Most common presenting complaints were oedema (88%), dilated veins (74%) and pain (71.3%). Conservative management was tried in all cases while Trendelenburg operation and SPJ ligation was done in 26.7% and 9.3% cases. Stripping and PERF ligation was done in 28.7% and 25.3% cases respectively. A total of 24.7% were lost to follow up. By the end of 6 month, quality of life improved in 70% cases. By the end of 6 month, symptoms improved in 72.5% cases while it disappeared in 26.5% cases. **Conclusion:** Males have been found to have larger incidence than females. They are mostly affected in their fourth and fifth decade of life. Ulceration and pain are the frequent findings in this condition. Compression stocking has beneficial effects if prolonged standing cannot be avoided during work hours. Trendelenburg operation with flush ligation with subfascial or extra fascial stripping is the definitive management and shows significant clinical improvement.

**Keywords:** Long Standing, Trendelenburg Operation, Varicose Stripping, Varicose Veins

## 1. Introduction

Valves of deep, perforating and/or superficial veins when incompetent lead to varicose veins. Elongated, dilated or tortuous subcutaneous veins of lower limb are due to the increase in venous pressure due to reflux and incompetence of veins<sup>1</sup>.

Low priority is given to this disease because mainly it is a problem in Cosmesis for the general population. Cost increase of its management is due to associated pain, swelling, open ulceration and other morbidities and leads to decrease in compliance of the patient<sup>2,3</sup>. There

is increase in the economic loss due to the debilitation caused by the disease<sup>4</sup>.

Change of occupation becomes a compulsion because of the debilitation and the surgical problems associated with the disease in low socio-economic class of people<sup>5</sup>. Quality of life of individuals is affected due to the complications of varicose veins<sup>6,7</sup>.

Aetiology of the disease is still completely not understood despite it being a common disease among all age groups<sup>1,2,8</sup>. Not much is known about the group of patients who are more susceptible to the complications of the varicose veins<sup>8</sup>. Established surgical management plan should be made for patients who present with

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varicose veins and its complications as there is no definitive management or plan for varicose veins<sup>8</sup>. The varicose veins clinical features are increased in number as a result its management strategies is a test of skill for the healthcare professionals<sup>9</sup>.

When the varicose veins are not treated in time, complications like skin discoloration, induration or active ulceration can occur frequently. When a refluxing saphenous vein is diagnosed, stripping leads to decreased morbidity and improvement in clinical features. The dilated GSV has been treated by HLS surgery. Albeit successful, there is high association with postoperative morbidity, which leads to the delay in return to day-to-day activities<sup>10-12</sup>. Reduced postoperative morbidity and faster recovery are equal or better efficacy than HLS surgery, which is the reason endovascular surgery has come into the management of varicose veins<sup>13-15</sup>. Over the last 10-15 years, HLS has been replaced by endovenous thermal ablation.

Not much literature is available in India, regarding the clinical spectrum of varicose veins in terms of its presentation, associated complications, management and outcome. The present study was thus conducted to study the clinical and sociodemographic profile, precipitating factors/risk factors, complications and various outcomes in treatment of varicose veins.

## 2. Aims and Objectives

1. To study the clinical and sociodemographic profile in patients of varicose veins of lower limb.
2. To study precipitating factors/ risk factors in varicose veins.
3. To study complications in patients of varicose veins.
4. To study various outcomes in management of varicose veins.

## 3. Material and Methods

### 3.1 Study Area

Department of Surgery of Dr. Vasantrao Pawar Medical College, Hospital and Research Centre, Nashik.

### 3.2 Study Population

All patients coming to Surgery OPD of Tertiary Care Centre presenting with signs and symptoms of

primary varicose veins of lower limbs with or without complications.

### 3.3 Study Design

A Prospective Study.

### 3.4 Inclusion Criteria

- Age Group  $\geq 18$  years irrespective of sex presenting with signs and symptoms of primary varicose veins of lower limbs with or without complications.
- Patient willing to give informed consent.

### 3.5 Exclusion Criteria

- Secondary varicose veins (deep vein thrombosis, arterio-venous fistula, pelvic tumors, pregnancy etc.).

### 3.6 Methodology

A detailed clinical history along with socio-demographic factors was obtained using a structured questionnaire. Relevant physical examination was done. Doppler of bilateral lower limbs with routine investigations was done to confirm the diagnosis.

The treatment was aimed at relief from symptoms and adjuvant care, prompt detection and definitive treatment of varicose veins and its complications.

Treatment options for management of varicose veins are reassurance with or without analgesia, leg elevation, compression therapy and surgical management

The following operative procedures were undertaken:

1. High, flush ligation of Sapheno-femoral junction with or without Stripping of Long Saphenous vein.
2. High, flush ligation of Sapheno-popliteal junction with or without Stripping of Short Saphenous vein.
3. Incompetent perforator vein ligation.

Clinical features, investigations and its inference, complications, surgical management, recurrence if any were recorded.

### 3.7 Follow-up

At the time of discharge, patients were advised to visit the surgical OPD at 3 months and 6 months for follow up. The patients were clinically assessed for any recurrences or complications and were noted during the follow up period.

## 4. Results

### 4.1 Socio-demographic Variables

In the study of 150 participants, the mean age of the cases with varicose veins of lower limb was 45.32 years with 46.7% of the cases were between the age group of 41-60 years while 15.3% were over 60 years of age. (Table 1). Male predominance was seen in present study with 64.7% males to 35.3% females. Most of cases in present study were engaged in work involving long standing hours i.e. farming (34%) and housewives (28%).

**Table 1.** Age distribution of study patients

Age group (years)	N	%
<= 20	2	1.3%
21-40	55	36.7%
41-60	70	46.7%
61-80	23	15.3%
<b>Total</b>	<b>150</b>	<b>100.0%</b>
<b>Mean age - 45.32 +/- 13.74 years</b>		

### 4.2 Clinical Profile

Bilateral pathology was seen in 13.3% cases while 86.7% cases were unilateral, of which 47.3% and 39.3% cases right and left sided pathology was present respectively. Most common presenting complaints were oedema (88%), dilated veins (74%) and pain (71.3%). (Table 2). Most common associated complications were dermatitis (43.3%), pigmentation (42.7%) and ulceration (20.7%). Sapheno-femoral incompetence exclusively was seen in 37 (24.60%) cases while sapheno-popliteal incompetence exclusively was seen in 11 (7.47%) cases. Perforators exclusively were involved in 15(10.00%) cases. Sapheno-femoral, Sapheno-popliteal and perforator incompetence is 29(19.30%).

**Table 2.** Presenting Symptoms

Symptoms	n	%
<b>Pain</b>	107	71.3%
<b>Dilated veins</b>	111	74.0%
<b>Oedema</b>	132	88.0%
<b>Claudication</b>	2	1.3%

**N = 150 cases**

### 4.3 Management of Primary Varicose Veins

Compression therapy was tried in all cases while Trendelenburg operation with stripping was done in 29(19.3%) cases and in 11(7.3%) cases Trendelenburg operation with stripping and Sapheno-femoral junction (SFJ) and perforator (PERF) ligation was done. Stripping and SFJ/PERF ligation was done in 3(2.00%) cases. (Table 3).

**Table 3.** Management of primary varicose veins amongst study patients

Management	n	%
<b>Compression therapy</b>	150	100.0%
<b>Trendelenburg + Stripping</b>	29	19.3%
<b>Trendelenburg + Stripping +SPJ/PERF Ligation</b>	11	7.3%
<b>Stripping + SPJ Ligation</b>	1	0.7%
<b>Stripping + SPJ/PERF Ligation</b>	2	1.3%

### 4.4 Follow-up

Associated complications encountered were hematoma 6(4%), seroma 13(8.7%) and wound infection 4(2.7%) patients. By the end of 3 months, quality of life improved in 36.7% cases, symptoms improved in 78.0% cases while it disappeared in 7.3% cases. A total of 24.7% were lost to follow up. (Table 4) By the end of 6 months, quality of life improved in 70% cases. By the end of 6 month, symptoms improved in 72.5% cases while it disappeared in 26.5% cases.

**Table 4.** Clinical outcome of 150 study patients

Clinical Improvement (6 months)	N	%
<b>Clinically Improved</b>	79	52.7%
<b>No Improvement</b>	34	22.7%
<b>Left Follow Up</b>	37	24.6%
<b>Total</b>	<b>150</b>	<b>100.0%</b>

## 5. Discussion

A hospital based prospective study was conducted at the Department of Surgery at a tertiary care centre.

The aim of the study was to evaluate the clinical and sociodemographic profile in patients of varicose veins of lower limb along with their management and outcome. Study included 150 cases presenting with signs and symptoms of primary varicose veins of lower limbs with or without complications.

## 5.1 Socio-demographic Variables

### 5.1.1. Age

Mean age of the cases with varicose veins of lower limb was 45.32 years with 46.7% of the cases between age of 41-60 years while 15.3% were over 60 years of age.

### 5.1.2 Sex

Male predominance was seen in present study with 64.7% males to 35.3% females.

Jaykar RD *et al.*<sup>16</sup> in their study observed 56% cases between the age group of 31-50 years of age with 60% males to females. Mishra S *et al.*<sup>17</sup> observed maximum patients were in age group of 45 to 54 years (26%) with 70% male population. Joseph N *et al.*<sup>18</sup> observed mean age as 44 years with 31.2% cases in age range of 41-50 years with 74.7% male population. Marunraj G *et al.*<sup>19</sup> reported mean age of 42 years in their study with 131 males to 71 females. Tonev *et al.*<sup>20</sup> in their study observed mean age of 41.3 years while Jin HK observed mean age of 53.2 years. Malhotra *et al.*<sup>21</sup> in their study comprising 677 patients from both North and South India had mean age of 31.2 years. West Wright *et al.*<sup>22</sup> in their study of 1338 patients in England had an age range of 33.2 years. Both studies observed male predominance in their studies.

Prolonged standing during work hours can be associated with male preponderance. Life style factors like smoking and alcoholism can also contribute to the disease. Lack of awareness and understanding of patients on issues related to occupational risk aggravates this condition.

## 5.2 Risk Factors and occupation

The current study shows 80% of the patients had occupational history of prolonged standing. Hence it signifies that occupation has a definite role as a risk factor. Most common profession in present study was farming (34%) followed by housewives (28%).

Mirji P *et al.*<sup>26</sup> in a study of 32 cases of varicose veins of lower limbs concluded that profession that leads to

prolonged standing and increased muscular efforts are more prone for developing varicose veins. Farmers were the most affected group (25%) followed by housewives (19%). Similar findings were also observed by Mishra S *et al.*<sup>17</sup> and Joseph N *et al.*<sup>18</sup> where farming was the most common occupation reported by study subjects.

## 5.3 Clinical Profile and Complications

Most common presenting complaints were oedema (88%), dilated veins (74%) and pain (71.3%). Most common associated complications were dermatitis (43.3%), pigmentation (42.7%) and ulceration (20.7%).

Jaykar RD *et al.*<sup>16</sup> in their study observed dilated veins in all cases accompanied by oedema (48%), pain (62%), pigmentation and itching (65%) and ulceration (34%). Joseph N *et al.*<sup>18</sup> in their study observed varicose veins as ulceration 98 (57.6%) followed by pain 96 (56.5%) and change in skin colour 91(53.5%) at the site as most common presentations respectively. This is followed by oedema (28.8%) and itching (20%). Satyanarayan *et al.*<sup>23</sup> in their study observed dilated veins in 92% cases followed by pain (70%), ulceration (23%) and oedema (20%) and pigmentation and itching (14%). Tonev *et al.*<sup>20</sup> in their study observed that all patients were symptomatic for their venous problems, with or without skin changes. Dilated veins, ulcer and oedema was seen in 38%, 10% and 3% cases respectively. Jin HY *et al.*<sup>24</sup> in their study observed that pre-operatively, 3.4% patients had severe pain, 22.2% had severe varicose veins, 3.4% had severe venous oedema and 2.6% had severe skin pigmentation. Campbell *et al.*<sup>25</sup> in their study observed pain in 57% cases, dilated veins in 90% cases.

## 5.4 Venous System Involved

Sapheno-femoral incompetence was seen in 79.3% cases while sapheno-popliteal incompetence was seen in 43.3% cases. Perforators were involved in 54% cases.

Jaykar RD *et al.*<sup>16</sup> in their study observed sapheno-femoral incompetence in 71.4% cases while sapheno-popliteal incompetence was seen in 15.07% cases. Perforators were involved in 52.4% cases. Hoare *et al.*<sup>27</sup> in their study observed sapheno-femoral incompetence in 95.65% cases while sapheno-popliteal incompetence was seen in 34.78% cases. Perforators were involved in 60.87% cases. Similar findings were seen in the study by Joseph N *et al.*<sup>18</sup> and Satyanarayan V *et al.*<sup>23</sup>

## 5.5 Management

Management depended upon the individual cases. When complications like oedema, eczema and ulcer were present, conservative treatment was given with compression dressings, elevation of the limb, antibiotics and other general supportive measures. Once the complications were controlled, patients were taken for definitive surgical management. Incompetent Saphenofemoral valve is tackled by Trendelenburg-Brodie operation with ligation. Incompetent perforators were managed by excising them either by multiple ligations. These procedures were done in combination with other procedures depending on the venous system involved.

In present study, trendelenburg operation with stripping was done in 19.3% cases and in 7.3% cases Trendelenburg operation with stripping and Sapheno-Femoral Junction (SFJ) and Perforator (PERF) ligation was done. Stripping and SFJ/ PERF ligation was done in 2% cases. By the end of 6 months, quality of life improved in 70% cases. Symptomatic improvement was seen in 72.5% cases while symptoms disappeared in 26.5% patients.

The gold standard for varicose vein surgery is combination of high ligation, stripping and division with multiple stab avulsions is described as<sup>28-30</sup> according to the guidelines in India<sup>31</sup>. This was done in 5.9% cases in the present study and in 42.8%–75% in other studies<sup>28,32</sup>. Recurrence in the particular surgery is the least<sup>28,4</sup>.

In the present study some minor complications encountered were hematoma (4%), seroma (8.7%) and wound infection (2.7%), which were managed conservatively. In our series, none of the patients complained of sensory impairment of the cutaneous distribution of long saphenous nerve.

Jaykar RD *et al.*<sup>16</sup> in their study observed hematoma in 4% cases while wound infections were seen in 8% cases. Satyanarayan V *et al.*<sup>23</sup> in their study observed complications like hematoma (9%), seroma (10%) and wound infection (6%) in their study. Similar findings were seen in the study by Joseph N *et al.*<sup>18</sup> and Hoare MC *et al.*<sup>27</sup>.

Thus, to summarize, distributions of varicose veins of lower limbs is more common in fourth and fifth decade of life (41-60 years) with male predominance. Combined Saphenofemoral and perforator incompetence is more common rather than individual incompetence. Most of the cases were managed successfully by only conservative

management while Trendelenburg Brodie operation with ligation/ along with stripping, is the procedure most commonly performed for effective treatment of severe varicose veins or where conservative treatment has failed.

## 6. Conclusion

Males formed the major group of individuals with varicose veins, mainly in their fourth and fifth decade of life. Varicose veins present with a many clinical features and required a wide variety of surgical as well as non-surgical treatment. Ulceration and pain are the frequent findings in this condition, delay in appropriate medical care leads to a morbid condition. Patients can use compression therapy during working hours as this may decrease the morbidity of the disease. In serious/resistant cases modern methods which lead to early recovery and low cost is needed. Trendelenburg operation with flush ligation with Subfascial or extrafascial stripping is the procedures done for effective treatment of varicose veins in these cases. Symptomatic and quality of life improvement was observed in majority of the cases after appropriate management.

## 7. References

1. Ahti T, Risk Factors of Varicose Veins, University of Tampere; Tampere: March 26<sup>th</sup>, 2010.
2. Das K., Ahmed S., Abro S., Arain M.S. Varicose veins; outcome of surgical management and recurrences. Prof. Med. J. 2014; 21: 509–513. <https://doi.org/10.29309/TPMJ/2014.21.03.2014>
3. Schoonover J.P., King J.T., Gray C., Campbell K., Sherman C. Alternatives to standard varicose vein treatment. J. Fam. Pract. 2009; 58: 522–526.
4. Latif A, Farhan MA, Waliullah K, Hamid A. Treatment and Incidence of Recurrence of Varicose Veins of Lower Limb. Medical Forum Monthly. 2019 Available from: <http://www.medforum.pk/index.php/article-database/9-articles/92-treatment-and-incidence-of-recurrence-of-varicose-veins-of-lower-limb>.
5. Callam M.J. Epidemiology of varicose veins. Br. J. Surg. 1994; 81: 167–173. <https://doi.org/10.1002/bjs.1800810204>
6. Kurz X., Lamping D.L., Kahn S.R., Baccaglini U., Zuccarelli F., Spreafico G., Abenheim L. Do varicose veins affect quality of life? Results of an international population-based study. J. Vasc. Surg. 2001; 34: 641–648. <https://doi.org/10.1067/mva.2001.117333>

7. Van Korlaar I., Vossen C., Rosendaal F., Cameron L., Bovill E., Kaptein A. Quality of life in venous disease. *Thromb. Haemost.* 2003; 90: 27–35. <https://doi.org/10.1055/s-0037-1613595>
8. Varicose veins. National Institute of Health and Care Excellence; Manchester: 2013. Diagnosis and Management. Available at <https://www.nice.org.uk/guidance/cg168/resources/varicose-veins-diagnosis-and-management-35109698485957>
9. Allen L. Assessment and management of patients with varicose veins. *Nurs. Stand.* 2009; 23: 49–57. <https://doi.org/10.7748/ns2009.02.23.23.49.c6801>
10. Mackay DC, Summerton DJ, Walker AJ. The early morbidity of varicose vein surgery. *J R Nav Med Serv* 1995; 81: 42–46. <https://doi.org/10.1136/jrnms-81-42>
11. Miller GV, Lewis WG, Sainsbury JR, Macdonald RC. Morbidity of varicose vein surgery: auditing the benefit of changing clinical practice. *Ann R Coll Surg Engl* 1996; 78: 345–349.
12. Baker DM, Turnbull NB, Pearson JC, Makin GS. How successful is varicose vein surgery? A patient outcome study following varicose vein surgery using the SF-36 Health Assessment Questionnaire. *Eur J Vasc Endovasc Surg* 1995; 9: 299–304. [https://doi.org/10.1016/S1078-5884\(05\)80134-0](https://doi.org/10.1016/S1078-5884(05)80134-0)
13. Lurie F, Creton D, Eklof B, Kabnick LS, Kistner RL, Pichot O *et al.* Prospective randomized study of endovenous radiofrequency obliteration (closure procedure) versus ligation and stripping in a selected patient population (EVOLVE Study). *J Vasc Surg.* 2003; 38: 207–214. [https://doi.org/10.1016/S0741-5214\(03\)00228-3](https://doi.org/10.1016/S0741-5214(03)00228-3)
14. Rautio T, Ohinmaa A, Perala J, Ohtonen P, Heikkinen T, Wiik H *et al.* Endovenous obliteration versus conventional stripping operation in the treatment of primary varicose veins: a randomized controlled trial with comparison of the costs. *J Vasc Surg.* 2002; 35: 958–965. <https://doi.org/10.1067/mva.2002.123096>
15. Proebstle TM, Alm BJ, Göckeritz O, Wenzel C, Noppeney T, Lebard C, Sessa C, Creton D, Pichot O. Five-year results from the prospective European multicentre cohort study on radiofrequency segmental thermal ablation for incompetent great saphenous veins. *Br J Surg.* Feb 2015; 102(3): 212–8. <https://doi.org/10.1002/bjs.9679>
16. Jaykar RD, Kasabe P, Kumar V. A study of clinical profile of varicose veins in our tertiary care center: a randomized prospective observational study. *Int Surg J.* 9 Dec 2016; 3(3): 1517–23. <https://doi.org/10.18203/2349-2902.isj20162739>
17. Mishra S, Ali I, Singh G. A study of epidemiological factors and clinical profile of primary varicose veins. *Med J DY Patil Univ* 2016; 9: 617–21. <https://doi.org/10.4103/0975-2870.192169>
18. Joseph N, Abhishai B, Thouseef MF, Devi U, Abna A, Juneja I. A multicenter review of epidemiology and management of varicose veins for national guidance. *Annals of medicine and surgery.* 1 Jun 2016; 8: 21–7. <https://doi.org/10.1016/j.amsu.2016.04.024>
19. Marunraj G, Aravind M, Thulasikumar G. Outcome of radio frequency ablation of various stages of varicose veins. *Univ. J. Surg. Surg. Spec.* 12 Nov 2015; 1(1).
20. Tonev AO, Genadiev SG, Dimitrov SG, Zahariev TT, Nachev GK. A retrospective study of 100 patients with varicose veins treated with radiofrequency ablation and stripping. *Phlebology.* 2013; 20(3): 150–4.
21. S L Malhotra “An Epidemiological Study of Varicose Veins in Indian Railroad Workers from the South and North of India, with Special Reference to the Causation and Prevention of Varicose Veins”. *International J. of Epidemiology.* 1972; (1): 177–183. <https://doi.org/10.1093/ije/1.2.177>
22. Wright *et al.* “The prevalence of venous disease in a west London population. In: Davy A, stemmer R, Eds. *Phlebology*’ 89. Paris: libbey Eurotext, 1989: 176–8.
23. Satyanarayan V, Sagar Z. Clinical profile and management of varicose veins at tertiary care hospital, India. *Int. J. Curr. Res.* 2016; 8(11): 42362–42367.
24. Jin HY, Ohe HJ, Hwang JK, Kim SD, Kim JY, Park SC, Kim JI, Won YS, Yun SS, Moon IS. Radiofrequency ablation of varicose veins improves venous clinical severity score despite failure of complete closure of the saphenous vein after 1 year. *Asian J. Surg.* 1 Jan 2017; 40(1): 48–54. <https://doi.org/10.1016/j.asjsur.2016.03.004>
25. W.B. Campbell: venous ulceration. *J. Dermatol Surg Oncol.* 19: 764 2003. <https://doi.org/10.1111/j.1524-4725.1993.tb00422.x>
26. Mirji P, Emmi S, Joshi C. Study of Clinical Features and Management of Varicose Veins of Lower Limb. *J. Clin. & Diag. Research.* 2011; 5(7): 1416–20.
27. Hoare MC. The role of primary varicose veins in venous ulceration. *Comprehensive Vascular and Endovascular Surgery: Expert Consult.* 1982; 92: 450–3.
28. Sahu S., Bhushan S., Sachan P. Clinico-anatomical and radiological study of varicose veins of lower limb and their management outcomes. *Internet J. Surg.* 2012; 28(2). <https://doi.org/10.5580/2aba>
29. Barandiaran J., Hall T., El-Barghouti N., Perry E. Day case management of varicose veins. *Vasc. Surg. Princ. Pract.* 2012 <http://www.intechopen.com/books/vascular-surgery-principles-and-practice/day-case-management-of-varicose-veins>. <https://doi.org/10.5772/51935>
30. Van den Bremer J., Moll F.L. Historical overview of varicose vein surgery. *Ann. Vasc. Surg.* 2010; 24: 426–432. <https://doi.org/10.1016/j.avsg.2009.07.035>

31. Sarma N. Guidelines and recommendation on surgery for venous incompetence and leg ulcer. *Indian Dermatol. Online J.* 2014; 5: 390–395. <https://doi.org/10.4103/2229-5178.137825>
32. Das K., Ahmed S., Abro S., Arain M.S. Varicose veins; outcome of surgical management and recurrences. *Prof. Med. J.* 2014; 21: 509–513. <https://doi.org/10.29309/TPMJ/2014.21.03.2014>
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