

University of Groningen

ASO Visual Abstract

Dutch Snapshot Research Group; Sluckin, Tania C; Hazen, Sanne-Marije J A; Horsthuis, Karin; Beets-Tan, Regina G H; Aalbers, Arend G J; Beets, Geerard L; Boerma, Evert-Jan G; Borstlap, Jaap; van Breest Smalenburg, Vivian

Published in:
Annals of surgical oncology

DOI:
[10.1245/s10434-023-13666-2](https://doi.org/10.1245/s10434-023-13666-2)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Dutch Snapshot Research Group, Sluckin, T. C., Hazen, S.-M. J. A., Horsthuis, K., Beets-Tan, R. G. H., Aalbers, A. G. J., Beets, G. L., Boerma, E.-J. G., Borstlap, J., van Breest Smalenburg, V., Burger, J. W. A., Crolla, R. M. P. H., Daniëls-Gooszen, A. W., Davids, P. H. P., Dunker, M. S., Fabry, H. F. J., Furnée, E. J. B., van Gils, R. A. H., de Haas, R. J., ... Posma, L. A. E. (2023). ASO Visual Abstract: Evaluation of National Surgical Practice for Lateral Lymph Nodes in Rectal Cancer in an Untrained Setting. *Annals of surgical oncology*, 30, 5486–5488. <https://doi.org/10.1245/s10434-023-13666-2>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



ASO Visual Abstract: Evaluation of National Surgical Practice for Lateral Lymph Nodes in Rectal Cancer in an Untrained Setting

Tania C. Sluckin^{1,2,3}, Sanne-Marije J. A. Hazen^{1,2,3}, Karin Horsthuis^{3,4}, Regina G. H. Beets-Tan^{5,6,7}, Arend G. J. Aalbers⁸, Geerard L. Beets^{6,8}, Evert-Jan G. Boerma⁹, Jaap Borstlap¹⁰, Vivian van Breest Smallegenburg¹¹, Jacobus W. A. Burger¹², Rogier M. P. H. Crolla¹³, Alette W. Daniëls-Gooszen¹⁴, Paul H. P. Davids¹⁵, Michalda S. Dunker¹⁶, Hans F. J. Fabry¹⁷, Edgar J. B. Furnée¹⁸, Renza A. H. van Gils¹⁹, Robbert J. de Haas²⁰, Stefan Hoogendoorn²¹, Sebastiaan van Koevorden²², Fleur I. de Korte²³, Steven J. Oosterling²⁴, Koen C. M. J. Peeters²⁵, Lisanne A. E. Posma²⁶, Bareld B. Pultrum²⁷, Joost Rothbarth²⁸, Harm J. T. Rutten^{6,12}, Renske A. Schasfoort²⁹, Wilhelmina H. Schreurs¹⁶, Petra C. G. Simons³⁰, Anke B. Smits³¹, Aaldert K. Talsma³², G. Y. Mireille The³³, Fiek van Tilborg³⁴, Jurriaan B. Tuynman^{1,2,3}, Inge J. Vanhooymissen⁴, Anthony W. H. van de Ven³⁵, Emiel G. G. Verdaasdonk³⁶, Maarten Vermaas³⁷, Roy F. A. Vliegen³⁸, F. Jeroen Vogelaar³⁹, Marianne de Vries¹⁹, Joy C. Vroemen⁴⁰, Sebastiaan T. van Vugt⁴¹, Marinke Westerterp⁴², Henderik L. van Westreenen⁴³, Johannes H. W. de Wilt⁴⁴, Edwin S. van der Zaag⁴⁵, David D. E. Zimmerman⁴⁶, Corrie A. M. Marijnen^{47,48}, Pieter J. Tanis^{2,3,28,49}, Miranda Kusters^{1,2,3}, and on behalf of the Dutch Snapshot Research Group

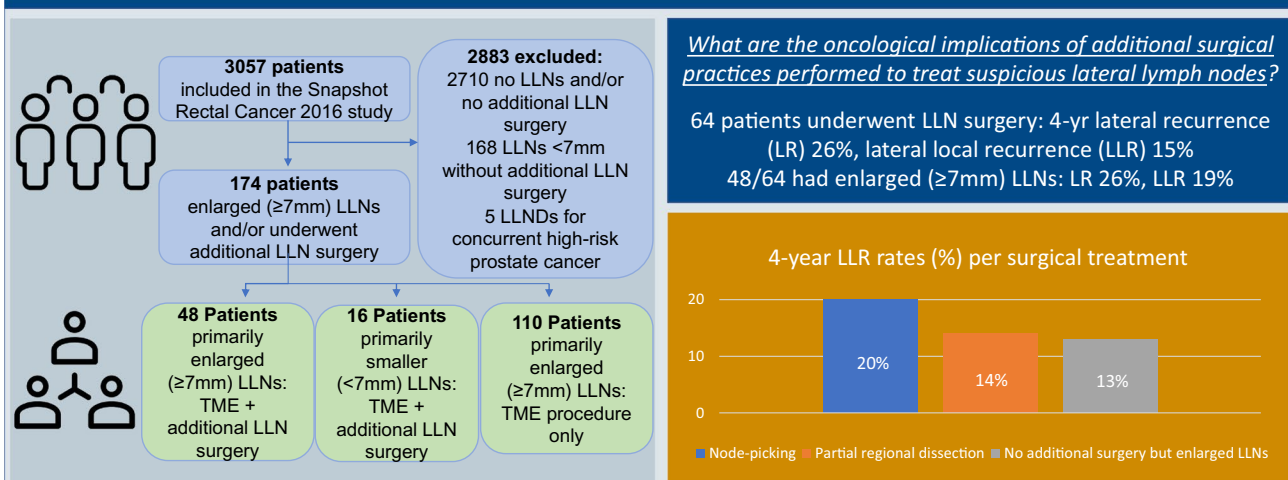
¹Department of Surgery, Amsterdam UMC, Vrije Universiteit, Amsterdam, the Netherlands; ²Cancer Center Amsterdam, Treatment and Quality of Life, Amsterdam, the Netherlands; ³Cancer Center Amsterdam, Imaging and Biomarkers, Amsterdam, the Netherlands; ⁴Department of Radiology and Nuclear Medicine, Amsterdam UMC, Amsterdam, the Netherlands; ⁵Department of Radiology, The Netherlands Cancer Institute, Amsterdam, the Netherlands; ⁶GROW School for Oncology and Reproduction, University of Maastricht, Maastricht, the Netherlands; ⁷Department of Radiology, Department of Clinical Research, Odense University Hospital, University of Southern Denmark, Odense, Denmark; ⁸Department of Surgery, The Netherlands Cancer Institute, Amsterdam, the Netherlands; ⁹Department of Surgery, Zuyderland Medical Center, Sittard-Geleen, the Netherlands; ¹⁰Department of Radiology, Treant Zorggroep, Hoogeveen, the Netherlands; ¹¹Department of Radiology, Jeroen Bosch Hospital, 's-Hertogenbosch, the Netherlands; ¹²Department of Surgery, Catharina Hospital, Eindhoven, the Netherlands; ¹³Department of Surgery, Amphia Hospital, Breda, the Netherlands; ¹⁴Department of Radiology, Catharina Hospital, Eindhoven, the Netherlands; ¹⁵Department of Surgery, Diakonessenhuis, Utrecht, the Netherlands; ¹⁶Department of Surgery, Northwest Clinics, NWZ Alkmaar, Alkmaar, the Netherlands; ¹⁷Department of Surgery, Bravis Hospital, Roosendaal, the Netherlands; ¹⁸Department of Surgery, Division of Abdominal Surgery, University Medical Center Groningen, University of Groningen, Groningen, the Netherlands; ¹⁹Department of Radiology, Erasmus MC, Rotterdam, the Netherlands; ²⁰Department of Radiology, University of Groningen, University Medical Center Groningen, Groningen, the Netherlands; ²¹Department of Radiology, Isala, Zwolle, the Netherlands; ²²Department of Radiology, Radboud University Medical Center, Nijmegen, the Netherlands; ²³Department of Radiology, Haaglanden Medical Centre, The Hague, the Netherlands; ²⁴Department of Surgery, Spaarne Gasthuis, Haarlem, the Netherlands; ²⁵Department of Surgery, Leiden University Medical Center, Leiden, the Netherlands; ²⁶Department of Surgery, Slingeland Hospital, Doetinchem, the Netherlands; ²⁷Department of Surgery, Martini Hospital, Groningen, the Netherlands; ²⁸Department of Surgical Oncology and Gastrointestinal Surgery, Erasmus MC, Rotterdam,

the Netherlands; ²⁹Department of Surgery, Treant Zorggroep, Hoogeveen, the Netherlands; ³⁰Department of Radiology, VieCuri Medical Centre, Venlo, the Netherlands; ³¹Department of Surgery, St. Antonius Hospital, Nieuwegein, the Netherlands; ³²Department of Surgery, Deventer Hospital, Deventer, the Netherlands; ³³Department of Radiology, Bravis Hospital, Roosendaal, the Netherlands; ³⁴Department of Radiology, Elisabeth-TweeSteden Hospital, Tilburg, the Netherlands; ³⁵Department of Surgery, Flevoziekenhuis, Almere, the Netherlands; ³⁶Department of Surgery, Jeroen Bosch Hospital, 's-Hertogenbosch, the Netherlands; ³⁷Department of Surgery, IJsselland Hospital, Capelle aan den IJssel, the Netherlands; ³⁸Department of Radiology, Zuyderland Medical Center, Sittard-Geleen, the Netherlands; ³⁹Department of Surgery, VieCuri Medical Centre, Venlo, the Netherlands; ⁴⁰Department of Radiology, Flevoziekenhuis, Almere, the Netherlands; ⁴¹Department of Surgery, Wilhelmina Assen Hospital, Assen, the Netherlands; ⁴²Department of Surgery, Haaglanden Medical Centre, The Hague, the Netherlands; ⁴³Department of Surgery, Isala, Zwolle, the Netherlands; ⁴⁴Department of Surgery, Radboud University Medical Center, Nijmegen, the Netherlands; ⁴⁵Department of Surgery, Gelre Hospital, Apeldoorn, the Netherlands; ⁴⁶Department of Surgery, Elisabeth-TweeSteden Hospital, Tilburg, the Netherlands; ⁴⁷Department of Radiation Oncology, Netherlands Cancer Institute, Amsterdam, the Netherlands; ⁴⁸Department of Radiation Oncology, Leiden University Medical Center, Leiden, the Netherlands; ⁴⁹Department of Surgery, Amsterdam UMC, University of Amsterdam, Amsterdam, the Netherlands

This cross-sectional retrospective study of 3057 patients from 69 Dutch hospitals (<https://doi.org/10.1245/s10434-023-13460-0>) examined how and when lateral lymph nodes (LLNs) were treated with additional surgical techniques. These techniques included 'node-picking,' the individual removal of a LLN and 'partial regional node dissection' (PRND) in which a certain compartment is removed. In total, 64 patients (2%) were treated with additional LLN surgery, and this cohort resulted in 4-year local recurrence (LR) and lateral local recurrence (LLR) rates of 26% and 15%, respectively. A total of 48 patients (75%) had enlarged

(≥ 7 mm) LLNs, with a 4-year LLR rate of 19%. Forty of these patients were treated with node-picking (4-year LLR 20%), and 8 via PRND (4-year LLR 14%). Multivariable analysis showed no significant difference between the 48 patients with enlarged LLNs who underwent additional LLN surgery versus 110 patients with enlarged LLNs who did not. These data insinuate that approximately one-third of patients with enlarged LLNs also undergo additional LLN surgical treatment, but these surgical techniques did not result in satisfactory long-term recurrence rates. Outcomes of LLN surgery after adequate training needs further research.

Evaluation of National Surgical Practice for Lateral Lymph Nodes (LLNs) in Rectal Cancer in an Untrained Setting



Sluckin et al. *Ann Surg Oncol*.

Visual Abstract by @TaniaSluckin @MirandaKusters for @AnnSurgOncol

ANNALS OF
**SURGICAL
ONCOLOGY**

ACKNOWLEDGEMENTS Collaborators of the Dutch Snapshot Research Group: Susanna M. van Aalten, Femke J. Amelung, Marjolein Ankersmit, Imogeen E. Antonisse, Jesse F. Ashruf, Tjeerd S. Aukema, Henk Avenarius, Renu R. Bahadoer, Frans C. H. Bakers, Ilsalieu S. Bakker, Fleur Bangert, Renée M. Barendse, Heleen M. D. Beekhuis, Willem A. Bemelman, Maaïke Berbée, Shira H. de Bie, Robert H. C. Bisschops, Robin D. Blok, Liselotte W. van Bockel, Anniek H. Boer, Frank C. den Boer, Leonora S. F. Boogerd, Wernard A. A. Borstlap, Johanna E. Bouwman, Sicco J. Braak, Manon N. G. J. A. Braat, Jennifer Bradshaw, Amarins T. A. Brandsma, Wim T. van den Broek, Sjik W. van der Burg, Thijs A. Burghgraef, David W. G. ten Cate, Heleen M. Ceha, Jeltsje S. Cnossen, Robert R. J. Coebergh van den Braak, Esther C. J. Consten, Maaïke Corver, Sam Curutchet, Emmelie N. Dekker, Jan Willem T. Dekker, Ahmet Demirkiran, Tyche Derksen, Arjen L. Diederik, Anne M. Dinaux, Kemal Dogan, Ilse M. van Dop, Kitty E. Droogh-de Greve, Hanneke M. H. Duijsens, Johan Duyck, Eino B. van Duyn, Laurentine S. E. van Egdome, Bram Eijlers, Youssef El-Massoudi, Saskia van Elderen, Anouk M. L. H. Emmen, Marc Engelbrecht, Anne C. van Erp, Jeroen A. van Essen, Thomas Fassaert, Eline A. Feitsma, Shirin S. Feshtali, Bas Frietman, Anne M. van Geel, Elisabeth D. Geijsen, Anna A. W. van Geloven, Michael F. Gerhards, Hugo Gielkens, Lucas Goense, Marc J. P. M. Govaert, Wilhelmina M. U. van Grevenstein, E. Joline de Groof, Irene de Groot, Nadia A. G. Hakkenbrak, Mariska D. den Hartogh, Vera Heesink, Joost T. Heikens, Ellen M. Hendriksen, Sjoerd van den Hoek, Erik J. R. J. van der Hoeven, Christiaan Hoff, Anna Hogewoning, Cornelis R. C. Hogewoning, Roel Hompes, Francois van Hoorn, René L. van der Hul, Rieke van Hulst, Farshad Imani, Bas Inberg, Martijn P. W. Intven, Pedro Janssen, Chris E. J. de Jong, Jacqueline Jonkers, Daniela Jou-Valencia, Bas Keizers, Stijn H. J. Ketelaers, Eva Knöps, Sylvia Kok, Stephanie E. M. Kolderman, Robert T. J. Kortekaas, Julie C. Korving, Ingrid M. Koster, Jasenko Krdzalic, Pepijn Krielen, Leonard F. Kroese, Eveline J. T. Krul, Derk H. H. Lahuis, Bas Lamme, An A. G. van Landeghem, Jeroen W. A. Leijten, Mathilde M. Leseman-Hoogenboom, Manou S. de Lijster,

Martijn S. Marsman, Milou H. Martens, Ilse Masselink, Wout van der Meij, Philip Meijnen, Jarno Melenhorst, Dietrich J. L. de Mey, Julia Moelker-Galuzina, Linda Morsink, Erik J. Mulder, Karin Muller, Gijsbert D. Musters, Joost Nederend, Peter A. Neijenhuis, Lindsey C. F. de Nes, M. Nielen, Jan B. J. van den Nieuwboer, Jonanne F. Nieuwenhuis, Joost Nonner, Bo J. Noordman, Stefi Nordkamp, Pim B. Olthof, Daan Ootes, Vera Oppedijk, Pieter Ott, Ida Paulusma, Ilona T. A. Pereboom, Jan Peringa, Zoë Pironet, Joost D. J. Plate, Fatih Polat, Ingrid G. M. Poodt, Jeroen F. Prette, Seyed M. Qaderi, Jan M. van Rees, Rutger-Jan Renger, Anouk J. M. Rombouts, Lodewijk J. Roosen, Ellen A. Roskotten Brinke, Dennis B. Rouw, Tom Rozema, Heidi Rütten, Marit E. van der Sande, Boudewijn E. Schaafsma, Merel M. Scheurkogel, Arjan P. Schouten van der Velden, Puck M. E. Schuivens, Colin Sietses, Marjan J. Slob, Gerrit D. Slooter, Martsje van der Sluis, Bo P. Smalbroek, Ernst J. Spillenaar-Bilgen, Patty H. Spruit, Tanja C. Stam, Sofieke J. D. Temmink, Jeroen A. W. Tielbeek, Aukje A. J. M. van Tilborg, Dorothée van Trier, Maxime J. M. van der Valk, G. Boudewijn C. Vasbinder, Cornelis J. Veeken, Laura A. Velema, Wouter M. Verduin, Tim Verhagen, Paul M. Verheijen, An-Sofie E. Verrijssen, Anna V. D. Verschuur, Harmke Verwoerd-van Schaik, Sophie Voets, Clementine L. A. Vogelij, Johanna Vos-Westerman, Johannes A. Wegdam, Bob J. van Wely, Paul P. van Westerveld, Allard G. Wijma, Bart W. K. de Wit, Fennie Wit, Karlijn Woensdregt, Victor van Woerden, Floor S. W. van der Wolf, Sander van der Wolk, Johannes M. Wybenga, Bobby Zamaray, Herman J. A. Zandvoort, Dennis van der Zee, Annette Zeilstra, Kang J. Zheng, Marcel Zorgdrager.

FUNDING The Snapshot Rectal Cancer 2016 study received funding from the Dutch Cancer Society (KWF), reference no. 12768.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.