

The Dublin International Society of Urological Pathology (ISUP) Consensus Conference on Best Practice Recommendations on the Pathology of Urachal Neoplasms

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Conflicts of Interest and Source of Funding: The authors have disclosed that they have no significant relationships with, or financial interest in, any commercial companies pertaining to this article.

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DOI: 10.1097/PAS.0000000000002416

Abstract: This manuscript summarizes the first part of the proceedings of the 2023 Dublin ISUP Consensus Conference encompassing the best practice recommendations on the pathology of neoplasms of urachal origin. The rationale for convening this consensus conference was the lack of structured and consented histopathologic recommendations in these rare tumors. Consensus among the meeting participants (n=80) was reached on the following statements: (1) combination of gross, histologic, clinical and imaging findings with exclusion of secondary tumor metastasis are to be used in the diagnosis of urachal carcinoma; (2) the 2022 World Health Organization (WHO) separate criteria for the diagnosis of urachal adenocarcinoma and for nonglandular carcinoma should be applied; (3) specific elements are to be evaluated and recorded in the gross examination of resection specimens containing urachal tumors; (4) sampling considerations for resection specimens containing urachal tumors are advised; (5) participants are against using 5% or 10% cutoff for the extent of intraepithelial carcinoma in urachal mucinous cystic tumor of low malignant potential; (6) use of immunohistochemical markers for the differential diagnosis of urachal adenocarcinomas in transurethral resection (TUR) specimen is considered optional; (7) similar tumor classificatory (nosology) rules for carcinomas arising from bladder mucosa (eg, urothelial carcinoma, squamous cell carcinoma, and neuroendocrine carcinoma) should be applied for nonglandular urachal carcinomas; (8) a new staging approach other than the previously proposed systems should be designed for urachal carcinoma; (9) a system modifying the current Tumor-Node-Metastasis (TNM)/American Joint Committee on Cancer (AJCC) staging system for urinary bladder cancer is considered appropriate for a study in urachal carcinoma; and (10) several histologic elements are to be reported when diagnosing urachal carcinoma in TUR and resection specimens. This report from the Dublin ISUP consensus conference will serve as a practice recommendation for pathologists and as a guide for future standardized reporting protocols and research regarding urachal tumors. In addition, an international database for urachal cancers under the guidance of ISUP is being planned to be established to address pertinent issues in the pathology of urachal cancers.

Key Words: urachal, adenocarcinoma, carcinoma, ISUP, consensus

(*Am J Surg Pathol* 2025;49:e18–e26)

In 2022, the fifth edition of the World Health Organization (WHO) classification of tumors of the urinary system and male genital organs was published including a newly structured chapter on urinary tract tumors.¹ This chapter also incorporates updated sections on urachal carcinomas (Fig. 1) and adenocarcinomas of the urinary bladder. While these are rare tumor types, our understanding of these neoplasms has considerably improved especially in the last few decades reflected by the growing interest and significant research conducted on these tumors. For example, PUBMED publications on “urachal cancer” or “urachal carcinoma” during the current decade

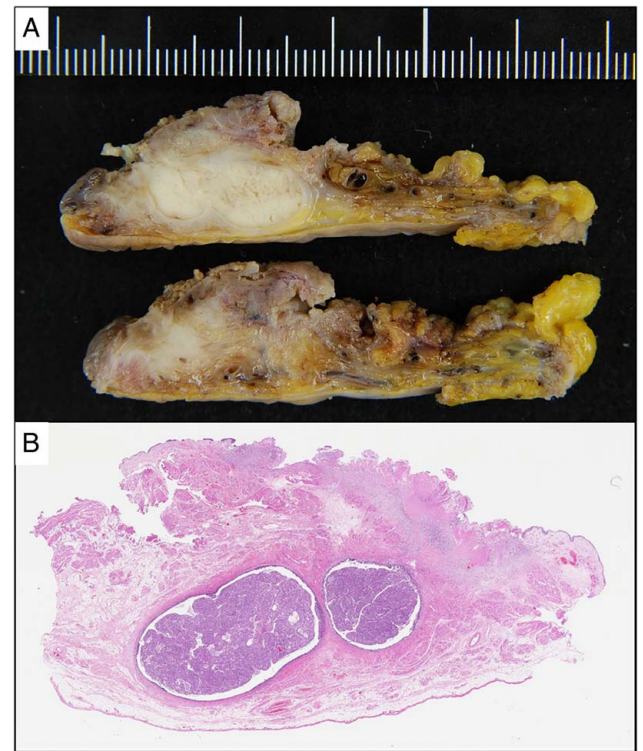


FIGURE 1. An example of an early urachal carcinoma case. (A) Gross image, cross section. (B) H&E in scanning magnification.

have doubled compared with that in the prior decade. As with the advancement in knowledge and the need for data standardization in research and reporting arise on these tumors, the International Society of Urological Pathology (ISUP) held a consensus conference on the best practice recommendations on the pathology of urachal neoplasms and glandular lesions of the urinary bladder on September 8, 2023, in Dublin, Ireland. Carcinomas arising from surgically constructed urinary reservoir pouches and urinary bladder diverticulum were also addressed in this meeting. These topics were deliberated under the guidance of ISUP working groups 1 and 2. Several statements were proposed on the diagnosis, gross examination, sampling, histologic typing and reporting of urachal tumors that are covered herein. Because of the limited data regarding some of the pathologic aspects of urachal tumors, expert opinions were offered, and data obtained from the premeeting survey were deliberated at the meeting. In the premeeting survey, the majority (102/125; 81.6%) of participants were trained pathologists with > 10 years experience. Most were situated in North America (n=42, 33.6%), followed by Europe (n=40, 32%), East/South Asia (n=15, 12%), Central/South America (n=12, 9.6%), and other locations. Most (n=100, 80%) worked in academic center or medical school-affiliated hospital, and had, given the rarity of urachal tumors, in most cases reported <5 urachal tumors a year (n=89, 71.2%), with 23.2% (n=29) reported 5 to 9 and 5.6% (n=7) reported 10 to 19 urachal tumor cases annually. A vote of at least 65%

among the participants was considered as consensus for the proposed statements, as previously described.²

DIAGNOSIS OF URACHAL CARCINOMA

Diagnosis of urachal carcinoma can often be achieved through a multidisciplinary approach by considering multiple contributing factors. In the general consideration of tumors as urachal in origin, premeeting survey revealed a high rate of agreement (77.6% to 100% in support) in the use of pathologic, clinical, and imaging factors in its diagnosis. During the meeting, consensus was again reached on all proposed variables for urachal carcinoma diagnosis (Table 1). Although inclusion of these findings into the general diagnostic work-up of urachal carcinoma was not disputed, the concept of excluding metastasis from a primary gastrointestinal tumor by perioperative gastroscopy/colonoscopy has been questioned recently.³

Pathologic diagnostic criteria have been proposed for noncystic and cystic urachal adenocarcinomas, and for nonglandular urachal carcinoma. The diagnostic criteria for noncystic urachal adenocarcinomas have evolved through the years from the criteria by Wheeler and Hill in 1954,⁴ Mostofi et al in 1955,⁵ Sheldon et al in 1984,⁶ Johnson et al in 1985,⁷ Gopalan et al in 2009,⁸ and Dhillon et al in 2015.⁹ The initial criteria required the presence of urachal remnants, which can be detected in 15% to 62.5% of urachal carcinomas.^{8,9} In addition, the view on the requirement for the absence of cystitis cystica and/or cystitis glandularis has been weakened over the years.⁸ The latest 2022 WHO criteria for noncystic urachal adenocarcinomas modified these elements even further (Table 2). As no pathologic diagnostic criteria were available for nonglandular urachal carcinomas, Paner et al¹¹ proposed a system in 2012, which was subsequently incorporated in the WHO classification (Table 2). In the premeeting survey, agreements of 89.6% and 70.97% were reached on the use of the 2022 WHO criteria for noncystic urachal adenocarcinomas and the 2022 WHO (Paner et al) criteria to diagnose nonglandular urachal carcinoma, respectively. As a subset of

urachal adenocarcinomas have cystic features, Amin et al¹³ proposed in 2014 a histologic classification akin to that used in ovarian mucinous cystic tumors.

Proposals and Voting

Similar to the results obtained from the premeeting survey, high rates of agreement were recorded among the participants at the meeting in support of the use of clinical, pathologic and radiologic findings, and the exclusion of secondary metastatic tumors, for diagnosing urachal carcinoma (Table 1). At the meeting, there was also strong support for the application of both the 2022 WHO criteria to diagnose noncystic urachal adenocarcinomas and the 2022 WHO (Paner et al) criteria to diagnose nonglandular urachal carcinoma, respectively.

GROSS EXAMINATION AND SAMPLING OF URACHAL TUMORS

Currently, there are no standardized protocols for the gross examination, sampling, and reporting of urachal carcinoma that are available from professional organizations such as the International collaboration on Cancer Reporting (ICCR; <https://www.iccr-cancer.org/datasets/published-datasets/>), the College of American Pathologists (CAP, <https://www.cap.org/protocols-and-guidelines>), or other (inter)national pathology societies. Therefore, general rules for gross examination, sampling and reporting are usually applied.^{14,15} This is reflected by the high rates of agreement in the premeeting survey regarding the proposed elements to be recorded in gross examination: specimen size (92% in support), tumor size largest dimensions, 2 or 3 dimensions (100% in support), tumor location and appearance (97.6% in support), bladder surface appearance (92% in support), involvement of the umbilical ligament, urachus, adjacent organ (s) or tissue (88% in support), resection margin status (eg, peripheral and deep or serosal, umbilicus, median umbilical ligament; 97.6% in support), and nodal status (84.8% in support). Currently, lymph node dissection is performed in 38% of cases.^{16,17} However, urachal carcinoma is associated with a higher risk of recurrence when lymph node involvement is present and 25% survival

TABLE 1. Diagnosis of Urachal Carcinoma Voting Results

Question	Response	Voting results
1. What findings would you recommend in diagnosing urachal carcinoma? (Multiple answers allowed)	Gross findings (including anatomic site: for example, dome, midline anterior wall, posterior wall, etc.)	100%, consensus
	Histologic findings (including histologic location, sharp demarcation from bladder surface, involvement of median umbilical ligament, the epicenter of carcinoma in the bladder wall, etc.)	100%, consensus
	Clinical findings (cystoscopy, surgery, etc.)	96%, consensus
	Radiologic findings	94%, consensus
	Exclusion of metastasis (absence of a known primary tumor with similar histology elsewhere)	86%, consensus
2. Would you recommend using the WHO 2022 criteria to diagnose urachal adenocarcinoma?	Yes	96%, consensus
	No	4%
3. Would you recommend using the WHO 2022 (Paner et al) criteria to diagnose nonglandular carcinoma?	Yes	96%, consensus
	No	4%

TABLE 2. 2022 WHO Diagnostic Criteria for Urachal Carcinomas

Noncystic urachal adenocarcinomas*	Nonglandular urachal carcinomas†
1. Tumor in the dome or elsewhere in the midline of the bladder	1. Tumor in the bladder dome or anterior wall and/or midline supravescical to the umbilicus
2. Sharp demarcation between tumor and surface urothelium	2. Tumor epicenter away from the bladder surface
3. Tumor epicenter in the muscularis propria or perivesical soft tissues with intact/ulcerated overlying urothelium; surface colonization may be present	3. No primary tumor of similar morphology elsewhere, except urothelial carcinoma in the genitourinary tract
4. Absence of extensive cystitis cystica et glandularis (particularly with any dysplasia) in the bladder	4. Close relationship with urachal remnant structures
5. Absence of urothelial carcinoma in situ elsewhere in the bladder	5. If no urachal remnant structure is identifiable, the tumor does not involve the intact bladder surface
6. Absence of primary adenocarcinoma in another organ	6. If no urachal remnant structure is identifiable and the tumor involves the bladder surface: for urothelial carcinoma only, cavitory or cystic tumor with intraluminal papillary structures; for all nonglandular urachal carcinomas, presence of reverse invasive front

*Modified from.^{4,7–10}
†Diagnosis requires 1 to 3 and any one of 4 to 6.¹¹
Permission for reproduction of the Table was granted by the International Agency for Research on Cancer (IARC)/WHO.¹²

reported when discovered incidentally on lymph node dissection.^{18,19}

Although no gross examination guidelines have been officially adopted for general use, most responders of the premeeting survey, in case of a partial cystectomy with en bloc resection of the urachus and umbilicus, considered number of sections (56% in support), relationship of the sections of the tumor and adjacent structures (96.8% in support), sampling of the median umbilical ligament, umbilicus, bladder, and perivesical fat (91.2% in support), resection margins (97.6% in support), and lymph nodes (88.9% in support) to be relevant.

Proposals and Voting

Consensus was reached on all the proposed gross examination elements and sampling considerations for urachal tumors (Table 3). Similar to the premeeting survey, several general parameters of tumor resection specimens including their size and appearance were recommended to be recorded during gross examination (91% to 100% in support). In parallel, evaluating tumor extent in relationship to the umbilicus, median umbilical ligament, bladder, and perivesical fat, adjacent structures, resection margins, and lymph nodes was voted to be required (98% in support). A specific sampling approach of the resection specimen was

TABLE 3. Gross Examination and Sampling of Urachal Tumors Voting Results

Question	Response	Voting results
1. What items do you recommend recording in gross examination? (Multiple answers allowed)	Specimen size	91%, consensus
	Tumor size (largest dimension, 2 dimension or 3 dimension)	98%, consensus
	Tumor location and appearance	100%, consensus
	Bladder surface appearance (ulcerative, smooth, etc.)	93%, consensus
	Involvement of the median umbilical ligament, urachus, adjacent organ(s) or tissue	98%, consensus
	Resection margin status (Peripheral and deep or serosal, umbilicus, median umbilical ligament)	98%, consensus
	Nodal status	97%, consensus
2. When submitting sections from partial cystectomy with en bloc resection of the urachus and umbilicus, will you require evaluating the umbilicus, median umbilical ligament, bladder, and perivesical fat, tumor relationship to adjacent structures, resection margins, and lymph nodes?	Yes	98%, consensus
	No	2%
3. When facing the diagnosis of a tumor arising from the urachus (including diverse carcinoma subtypes showing cystic or noncystic architecture), do you require a specific sampling approach of the resection specimen?	Yes	94%, consensus
	No	6%
4. What are the aspects do you recommend when submitting the specimen (partial cystectomy with en bloc resection of the urachus and umbilicus)? (Multiple answers allowed)	Number of sections	75%, consensus
	Relationship of the sections of the tumor and adjacent structures	95%, consensus
	Sampling of median umbilical ligament, umbilicus, bladder, and perivesical fat	100%, consensus
	Resection margins	100%, consensus
	Lymph nodes	100%, consensus
	Yes	91%, consensus
5. Do you consider it reasonable to completely embed the tumor if the largest tumor dimension is 5 cm or less, and then submit one section per cm of the remaining tumor?	No	9%

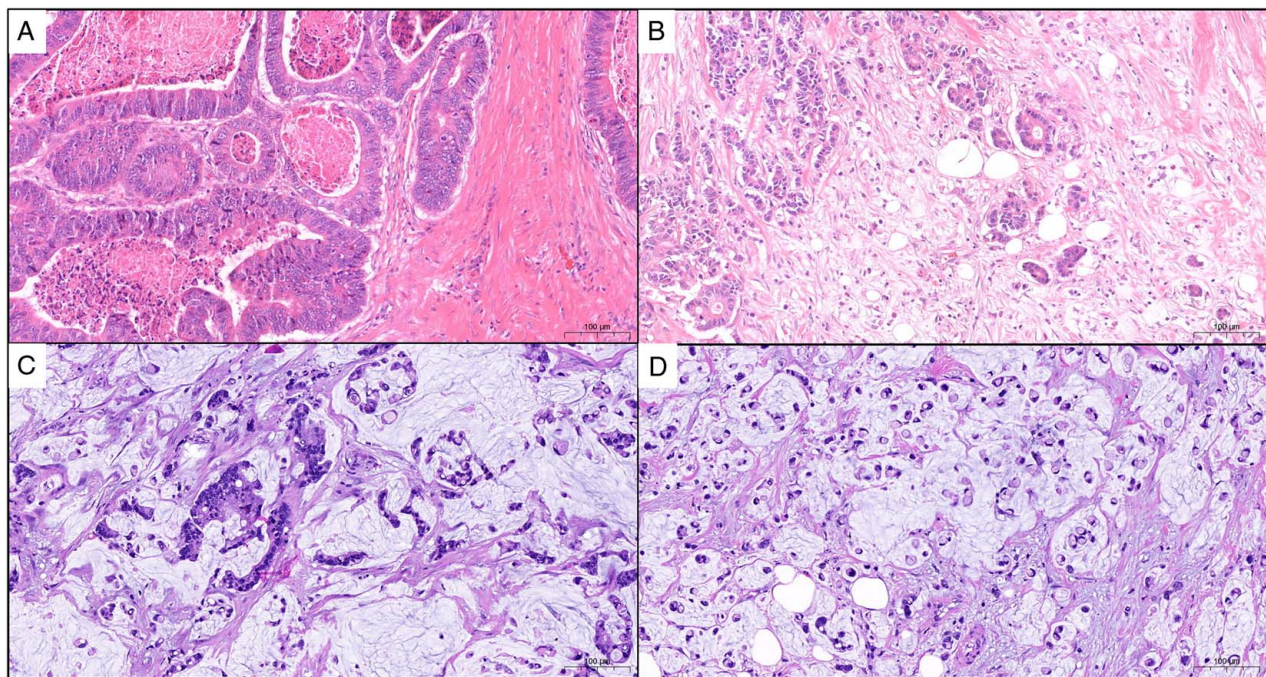


FIGURE 2. Histologic subtypes of noncystic urachal adenocarcinomas. (A) intestinal subtype with complex glands with oval hyperchromatic nuclei and loss of polarity as commonly seen in colorectal adenocarcinoma, (B) not otherwise specified (NOS) subtype with nonspecific glands and tumor cell clusters, (C) mucinous subtype with floating tumor cell clusters in large amounts of extracellular mucin, and (D) another area of the tumor in (C) showing signet ring cell morphology.

additionally voted for (94% in support) while a specific, size dependent approach could not reach consensus in the pre-meeting survey (9.4% to 50% in support). In the meeting, consensus was reached (91% in support) to completely embed the tumor if the largest tumor dimension is 5 cm or less, and then submit one section per cm of the remaining tumor. Regarding aspects to recommend when submitting the specimen, consensus was reached in all the proposed items (75% to 100% in support) including number of sections, relationship of the sections of the tumor and adjacent structures, sampling of median umbilical ligament, um-

bilicus, bladder, and perivesical fat, resection margins, and lymph nodes.

HISTOLOGIC TYPING OF URACHAL TUMORS

Only minor modifications in the histologic typing of nonglandular urachal tumors were made from the 2016 WHO to the 2022 WHO classification.^{1,12,20}

No changes have been made to the histologic subtypes of urachal noncystic and cystic adenocarcinomas. Noncystic urachal adenocarcinomas can exhibit enteric

TABLE 4. Histologic Typing of Urachal Tumor Voting Results

Question	Response	Voting results
1. Concerning mucinous cystic tumor of low malignant potential, would you recommend applying a cutoff for the extent of intraepithelial carcinoma?	Yes	25%
	No	75%, consensus
2. If consensus was Yes? What cutoff in percent would you recommend for the extent of intraepithelial carcinoma?	5%	9%
	10%	23%
	Other cutoffs	68%*
	Yes	54%
3. Concerning mucinous cystadenocarcinoma with microinvasion, would you recommend the criteria of <2 mm comprising <5% of the tumor?	No	46%
	Yes	89%, consensus
4. Should the use of any immunohistochemical markers for the differential diagnosis of urachal adenocarcinomas in TUR remain optional?	No	11%
	Yes	96%, consensus
5. Regarding the nonglandular urachal carcinomas, would you recommend similar tumor classificatory rules (or nosology) as for carcinomas arising from the bladder mucosa (eg, urothelial, squamous and neuroendocrine carcinomas)?	No	4%
	Yes	48%
6. In completely submitted TUR samples, would you recommend making a diagnosis of noncarcinomatous glandular urachal tumors (eg, villous adenoma, LMP)?	No	52%

*This item is not included in the consensus list, as it was dependent on a positive consensus in the prior question, which has not been reached for the positive, but the negative recommendation.

(intestinal), mucinous (colloid), signet-ring cell, not otherwise-specified (NOS), and mixed morphologic patterns (Fig. 2). Mucinous cystic tumor of low malignant potential (MCTLMP) and mucinous cystadenocarcinoma are included in the 2022 WHO classification as originally described by Amin et al¹³ in 2014 and first added in the prior 2016 WHO classification. In the original publication, MCTLMP were further subclassified based on the presence of intraepithelial carcinoma and microinvasion defined as stromal invasion of <2 mm and <5% of the tumor. Tumors with more extensive invasion were termed mucinous cystadenocarcinoma with frank invasion. Since its original proposal, additional cases have been reported in the literature, however, the data remain sparse in contrast to its mucinous cystic tumor counterparts from the ovary.²⁰

The rare nonglandular tumor types remained included in the current 2022 WHO classification and have morphologies similar to their counterparts arising from the urinary tract or bladder proper (eg, urothelial carcinoma including subtypes and squamous cell carcinoma). However, the term “neoplasms” was replaced by “carcinoma”. No other neuroendocrine neoplasms were mentioned apart from the neuroendocrine carcinoma (NEC). In addition, the class of mixed-type neoplasms was replaced by mixed carcinomas.

It is acknowledged that histologic subtypes of non-cystic urachal adenocarcinomas, such as enteric (intestinal) or mucinous (colloid) subtypes, cannot be definitively differentiated from their counterparts in other organs based on histomorphology alone. Several immunohistochemical (IHC) markers have been proposed in the literature for their differential diagnostic use. Although IHC might help in selected cases, it does not facilitate the differential diagnostic work-up in all situations.^{21,22} This is reflected by the lack of agreement in the premeeting survey of the use of IHC markers for differential diagnosis of urachal adenocarcinomas in practice (always use: 25%; use only in selected cases: 62.90%; and not used: 12.90%). Responders used CK7, CK20, and CDX2 (all 79.8%), GATA3 (78.1%), β -catenin (71.1%), SATB2 (48.3%), p63 (47.4%), others (5.3%), and claudin18 (2.6%).

Proposals and Voting

During the meeting, consensus was not reached on some of the proposed statements (Table 4). However, mirroring the results in premeeting survey, consensus was achieved in the optional use of any IHC markers for the differential diagnosis of urachal adenocarcinomas in TUR specimen (89% in support). Regarding MCTLMP, there was consensus against applying a cutoff for the extent of intraepithelial carcinoma (75% opposed). When asked about specific cutoffs for intraepithelial carcinoma, 68% of the participants recommended the use of cutoffs other than the proposed 5% or 10%. No consensus could be reached on the proposed criteria for microinvasion (<2 mm comprising <5% of the tumor). This lack of support regarding the classification of MCTLMP cutoffs can be attributed to the limited data and experience on these rare tumors.²³

Consensus was reached on the recommendation to classify nonglandular urachal carcinomas using similar tumor classificatory rules (or terminology) as for carcinomas arising from the bladder mucosa (96% in support). Until future evidence suggests otherwise, urachal urothelial, squamous cell carcinomas, and NEC are deemed to have morphologic and other tumor features akin to their bladder mucosal proper counterparts. No recommendation could be made in committing to a definitive diagnosis for noncarcinomatous glandular urachal tumors in a completely submitted TUR specimen.

STAGING FOR URACHAL CARCINOMA

Specific staging systems that have been in use for urachal carcinoma include the approaches suggested by Sheldon et al in 1984,⁶ by Ashely et al (Mayo system) in 2006,²⁴ and by Pinthus et al (Ontario system) in 2006.²⁵ The Tumor-Node-Metastasis (TNM)/American Joint Committee on Cancer (AJCC) system for urinary bladder carcinoma is not primarily designed for urachal carcinoma. Using the TNM/AJCC system, early-stage tumors having their epicenter outside of the urinary bladder can be overstaged.²⁶ The prognostic usefulness of these different staging systems has been limited to grouping the higher and lower stage categories instead of stratifying the outcome based on the individual staging categories. In the premeeting survey, no consensus agreement was reached on the use of a particular staging system with most responders (57.6%) preferred the TNM/AJCC system, followed by Sheldon system (31.2%), Mayo system (6.4%), and Pinthus system (0.8%). Some responders also indicated the use of more than one system in their reports.

Although the TNM/AJCC system is not primarily designed for urachal cancer, the relatively higher rate of its use in routine pathology practice reflects the need for a unified system that is somewhat based on bladder cancer TNM/AJCC system. Following this view, a staging system for urachal cancer based on the bladder cancer TNM/AJCC system has been recently proposed by stage-converting urachal cancers from the National Cancer Data Base (NCDB) originally staged using the bladder cancer TNM/AJCC system.²⁷ In addition, the use of the TNM system for bladder cancers has also been reported to be of prognostic utility in urachal cancers.^{9,28} However, a staging system specifically designed for urachal cancer and validated in a large-scale prospective study is needed.

Proposals and Voting

The controversy about the use of the different staging systems is reflected by the voting results at the meeting (Table 5). Consensus was reached (77% in support) for the proposal to use another staging system for urachal carcinoma other than the systems by Sheldon et al, Ashley et al (Mayo), Pinthus et al (Ontario), or the TNM/AJCC system for urinary bladder cancer. There was considerable discussion during the meeting on the ideal staging system for urachal cancer. It was suggested that a modified TNM/AJCC system, somewhat designed from the TNM/AJCC system used for bladder cancer, is desirable (98% in sup-

TABLE 5. Staging for Urachal Carcinoma Voting Results

Question	Response	Voting results
1. Which system would you recommend when staging urachal carcinoma?	Sheldon et al 1984 ⁶	4%
	Ashley et al 2006 (Mayo System) ²⁴	0%
	Pinthus et al 2006 (Ontario system) ²⁵	0%
	TNM/AJCC system (for urinary bladder)	19%
	Others	77%, consensus
2. Do you think it is desirable to modify TNM/AJCC (for urinary bladder) for urachal cancer?	Yes	98%, consensus
	No	2%

port). Such a proposed staging system, however, will have to be prospectively validated using a large cohort of patients with urachal cancer. From this discussion, it was proposed that an international database for urachal cancers under the guidance of ISUP should be established to address the staging issue, as well as other issues pertaining to the pathology of urachal cancers. This ISUP endeavor for a central data repository for urachal cancer is currently in progress and is expected to be launched in the near future.

REPORTING ELEMENTS FOR URACHAL CARCINOMA

Since there are no standardized protocols currently used for reporting of urachal carcinoma from ICCR, CAP, or other professional (inter)national organizations, reporting of urachal cancers follows the generally accepted elements for urinary tract and other tumors. In the premeeting survey, majority of responders would report in TUR specimens the histologic type (99.2% in support), histologic grade (96% in support), lymphovascular invasion (LVI, 96% in support), bladder surface mucosa status (92.8% in support), presence of urachal remnants (79.2% in support), presence of metaplastic changes in the non-neoplastic mucosa (78.4% in support), and perineural invasion (PNI, 56.8% in support). Regarding surgical resection specimens (such as cystectomy), similar results were recorded for inclusion of histologic type (99.2% in support), LVI (98.4% in support), surgical margin status (98.4% in support), histologic grade (96% in support), nodal status (96% in support), invasion into adjacent organ(s) or tissue (94.4% in support),

bladder surface mucosa status (93.6% in support), peritoneal involvement (87.2% in support), presence of urachal remnants (85.6% in support), presence of metaplastic changes in non-neoplastic mucosa (78.8% in support), PNI (72% in support), and demarcation between tumor and bladder surface mucosa (60.8% in support).

There are no specific histologic grading systems that have been proposed for urachal adenocarcinomas and nonglandular carcinomas in the literature.¹⁰ Grading approaches to these tumors are usually in similar manners to those used in their histologically analogous tumors (eg, adenocarcinoma, urothelial carcinoma, and squamous cell carcinoma) from the urinary tract or other organ sites.²¹

Proposals and Voting

At the meeting, consensus recommendations for the proposed elements for reporting in TUR and surgical resection specimens during the meeting were similar to those in the premeeting survey. A consensus was reached for all (70% to 100% in support, Table 6) but one element (PNI in TUR specimen, 63% in support). Some of these elements mirror the common variables for tumor prognostication and management, in addition to the more specific elements applied for urachal carcinoma.

CONCLUSIONS AND FUTURE PERSPECTIVE

The Dublin ISUP consensus conference on the best practice recommendations on the pathology of urachal neoplasms and glandular lesions of the urinary bladder was the first to focus primarily on these unusual tumors. In addition to the present first part on urachal lesions, the

TABLE 6. Reporting Elements for Urachal Carcinoma Voting Results

Question	Response	Voting results
1. What histologic items do you recommend reporting in the TUR specimen other than staging? (Multiple answers allowed)	Histologic type	100%, consensus
	Histologic grading	98%, consensus
	Lymphovascular invasion	98%, consensus
	Perineural invasion	63%
	Bladder surface mucosa status (eg, tumor involvement, villous adenomatous changes, urothelial carcinoma in situ)	95%, consensus
	Presence of metaplastic changes in non-neoplastic mucosa	77%, consensus
2. What additional histologic elements do you recommend reporting in the surgical resection specimen other than staging? (Multiple answers allowed)	Presence of urachal remnants	90%, consensus
	Demarcation between tumor bladder surface mucosa	70%, consensus
	Peritoneal involvement	98%, consensus
	Invasion to adjacent organ(s) or tissue	100%, consensus
	Surgical margin status	100%, consensus
	Nodal status	98%, consensus

TABLE 7. Participants at the 2023 Dublin ISUP Consensus Conference on Best Practice Recommendations on the Pathology of Urachal Neoplasms and Glandular Lesions of the Urinary Bladder

Name	Country
Paner, Gladell P. (Overall chair)	USA
Reis, Henning (Overall chair)	Germany
Al-Ahmadie, Hikmat (WG chair)	USA
Gaisa, Nadine T. (WG chair)	Germany
Lopez-Beltran, Antonio (WG chair)	Spain
Maclean, Fiona (WG chair)	Australia
Tsuzuki, Toyonori (WG chair)	Japan
Werneck da Cunha, Isabela (WG chair)	Brazil
Amin, Mahul B. (WG member)	USA
Algaba, Ferran	Spain
Aron, Manu (WG member)	USA
Athanazio, Daniel (WG member)	Brazil
Bambury, Richard (WG member)	Ireland
Barrett, Ciara	Ireland
Bertz, Simone	Germany
Bezerra, Stephania M.	Brazil
Birbe, Ruth	USA
Chaudhri, Preeti	Australia
Cheng, Liang (WG member)	USA
Cho, Yong Mee	South Korea
Cimadamore, Alessia	Italy
Downes, Michelle R.	Canada
Elgeredly, Nadine	UK
Fleischmann, Achim	Switzerland
Gopalan, Anuradha (WG member)	USA
Gulmann, Christian (WG member)	Ireland
Guo, Charles (WG member)	USA
Haider, Aiman	UK
Hallam, Lavinia Ann	Australia
Harris, Carole A. (WG member)	Australia
Hartmann, Arndt	Germany
Hatimy, Umi	UK
Herrera, Loren	USA
Huang, Jiaoti	USA
Iyer, Gopa (WG member)	USA
Jimenez, Rafael (WG member)	USA
Jinzaki, Masahiro (WG member)	Japan
Jufe, Laura	Argentina
Kaushal, Seema	India
Kenny, Sarah	UK
Kikuchi, Eiji (WG member)	Japan
Kristiansen, Glen	Germany
Lal, Priti (WG member)	USA
Lee, Hojung	South Korea
Leite, Katia	Brazil
Mayer, Nick	Ireland
McCormick, Christina	UK
McHale, Teresa	Ireland
Miyai, Kosuke (WG member)	Japan
Montironi, Rodolfo	Italy
O'Donnell, Marie	UK
Netto, George (WG member)	USA
Pan, Chin-Chen (WG member)	Taiwan
Panebianco, Valeria (WG member)	Italy
Park, Yang Soon	South Korea
Picken, Maria	USA
Sanguedolce, Francesca	Italy
Siefker-Radtke, Arlene (WG member)	USA
Shah, Nigam	Ireland
Smith, Steven (WG member)	USA
Srigley, John	Canada
Sauter, Guido	Germany
Suzigan, Sueli	Brazil
Swarbrick, Nicole	Australia

TABLE 7. (continued)

Name	Country
Szarvas, Tibor (WG member)	Hungary
Theodosiou, Matthew	UK
Tretiakova, Maria	USA
Trias, Isabel	Spain
True, Lawrence (WG member)	USA
Vakar Lopez, Funda	USA
Van Leenders, Geert	Netherlands
Van Rhijn, Bas (WG member)	Netherlands
Vlatkovic, Ljiljana	Norway
Wang, Gang	Canada
Wightman, Daniela	Canada
Wightman, Robert H.	Canada
Williamson, Sean R.	USA
Wobker, Sara (WG member)	USA
Ye, Huihui	USA
Zhang, Hong	USA

WG indicates working group.

second part focusses mainly on urinary bladder glandular lesions and is published elsewhere.²⁹ With the participations of international experts (Table 7), consensus was reached on many of the statement proposals. However, due to the rarity of these tumors, several items that were deliberated relied on expert opinions and data from the premeeting survey results. The recommendations from this consensus conference can advise pathologists on their practice and can inform future standardized reporting protocols specific for urachal cancers. In the future, the establishment of a standard reporting protocol for general use is needed. The need for a uniform staging system for urachal cancers is emphasized. The existing knowledge gaps can be potentially answered through the establishment of a large, internationally coordinated urachal cancer cases repository that will provide additional data to foster optimal diagnosis and therapy in urachal cancer.

ISUP EXPERT PANEL ON URACHAL NEOPLASMS AND URINARY BLADDER GLANDULAR LESIONS

Algaba, Ferran (Spain); Barrett, Ciara (Ireland); Bertz, Simone (Germany); Bezerra, Stephania M. (Brazil); Birbe, Ruth (USA); Chaudhri, Preeti (Australia); Cho, Yong Mee (South Korea); Cimadamore, Alessia (Italy); Downes, Michelle R. (Canada); Elgeredly, Nadine (UK); Fleischmann, Achim (Switzerland); Haider, Aiman (UK); Hallam, Lavinia Ann (Australia); Hartmann, Arndt (Germany); Hatimy, Umi (UK); Herrera, Loren (USA); Huang, Jiaoti (USA); Iyer, Gopa (USA); Jufe, Laura (Argentina); Kaushal, Seema (India); Kenny, Sarah (UK); Lee, Hojung (South Korea); Leite, Katia (Brazil); Mayer, Nick (Ireland); McCormick, Christina (UK); McHale, Teresa (Ireland); Montironi, Rodolfo (Italy); O'Donnell, Marie (UK); Park, Yang Soon (South Korea); Picken, Maria (USA); Sanguedolce, Francesca (Italy); Shah, Nigam (Ireland); Srigley, John (Canada); Sauter, Guido (Germany); Suzigan, Sueli (Brazil); Swarbrick, Nicole (Australia); Theodosiou, Matthew (UK); Tretiakova, Maria (USA); Trias, Isabel (Spain); Vakar

Lopez, Funda (USA); Van Leenders, Geert (The Netherlands); Vlatkovic, Ljiljana (Norway); Wang, Gang (Canada); Wightman, Daniela (Canada); Wightman, Robert H. (Canada); Williamson, Sean R. (USA); Ye, Huihui (USA); Zhang Hong (USA)

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