Digital Preservation and Portico: An Overview

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The Preservation Challenge

- Published scholarship and other resources must be reliably preserved for the long-term.
- Publishing practices for electronic resources are still evolving.
- Parties responsible for fulfilling the preservation role are not yet clearly identified.
- Digital preservation practice is also new and evolving.

Portico Background

- Portico was launched in 2005 by JSTOR and Ithaka, with support from The Andrew W. Mellon Foundation and the Library of Congress.
- Portico is a not-for-profit organization with a mission and singular focus to provide a permanent archive of electronic scholarly journals.

Portico's Mission

To preserve scholarly literature published in electronic form

and to ensure that these materials remain available

to future generations of scholars, researchers, and students.

Portico's Approach

- Publishers deliver "source files" of electronic journals (SGML, XML, PDF, etc.) to Portico.
- When files are received in proprietary formats or formats deemed obsolete or unstable, they are pre-emptively normalized to an archival target for preservation and to facilitate future migration.
- Portico's preservation format for SGML/XML files is based upon the NLM Archiving DTD.
- Both the original sources files and the normalized files are retained in the archive.

Portico's Approach: Content Scope

In scope:

- Electronic scholarly, peer reviewed journals
- Intellectual content of the journal, including text, tables, images, sound files, video, and supplemental files
- Limited functionality such as internal linking

Out of scope:

- Full features and functionality of publisher's delivery platform
- Ephemeral look and layout of today's HTML rendition of a journal

Portico's Approach: Access

- Portico offers access to archived content to only those libraries supporting the archive.
- Portico's delivery infrastructure leverages JSTOR's existing technology and investment.
- Access is offered only when specific trigger event conditions prevail **and** when titles are no longer available from the publisher or other sources.
- Trigger events initiate institution-wide access for all libraries supporting the archive regardless of whether a library previously subscribed to the publisher's offering.

Portico's Approach: Access

- Trigger events include:
  - When a publisher ceases operations and titles are no longer available from any other source.
  - When a publisher ceases to publish and offer a title and it is not offered by another publisher or entity.
  - When back issues are removed from a publisher's offering and are not available elsewhere.
  - Upon catastrophic failure by publisher delivery platform for a sustained period of time.

Portico's Approach: Access

- Select librarians at participating libraries are granted password-controlled access for archive audit and verification purposes.
- Libraries may rely upon the Portico archive for post-cancellation access, **if** a publisher chooses to name Portico as one of the mechanisms designated to meet this obligation.
- Portico may be one of several post-cancellation access mechanisms designated by publishers.

Sources of Support

- Support for the archive comes from the primary beneficiaries of the archive - publishers and libraries.
- Contributing publishers supply content and make an annual financial contribution ranging from $250 to $75,000, depending upon journal revenues.
- To date 32 publishers from across the spectrum have promised over 5,800 journals to the archive.

Sources of Support

- Libraries make an Annual Archive Support (AAS) payment based upon total library materials expenditures. AAS payments range from $1,500 to $24,000 annually.
- To date over 310 libraries from across the spectrum participate in Portico.
- Approximately 25% of participating libraries are outside the U.S.

Australia	India
Canada	New Zealand
Cyprus	Sweden
Greece	United Kingdom

Considerations Going Forward

- A variety of solutions for e-journal preservation are emerging but these will need to continue to respond to evolving publishing practices.
- Publishers are now moving to second generation production and delivery platforms.
- Publishing system complexity and capacity for standards compliance varies significantly across producers.
- Treatment for updates are still highly varied.
- Datasets is an area of uncertainty and very limited standardization. Evolving practice will be impacted by data size and discipline-specific needs.

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Proton beam therapy for hepatocellular carcinoma with limited treatment options

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History

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Abstract

BACKGROUND.

The authors conducted a retrospective review to define the usefulness of proton beam therapy for patients who had hepatocellular carcinoma (HCC) with limited treatment options.

METHODS.

Twenty{HYPHEN}one patients with HCC for whom other treatment modalities either were contraindicative or were unfeasible because of coexisting diseases and unfavorable conditions received proton beam therapy. Four patients had renal failure, 2 patients had severe heart disease, 9 patients had severe cirrhosis, 1 patient had aplastic anemia, 1 patient had a dissecting abdominal aortic aneurysm before treatment, and 4 patients had

Keywords

coexisting disease; hepatocellular carcinoma; proton beam therapy; radiation therapy

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Hepatocellular carcinoma (HCC) is among the most common contributors to cancer incidence and mortality, and approximately 80% of the burden involves countries in Asia and Africa.[1] Recently, more advanced treatments for HCC have been developed, and many patients with HCC now may be treated effectively with various procedures (i.e., surgical resection, transcatheter arterial chemoembolization [TACE], percutaneous ethanol injection [PEI], percutaneous microwave coagulation [PMC], and radiofrequency ablation [RFA]).[2] Although surgical resection remains a standard and reliable curative modality for patients with HCC, nearly 80% of HCCs are unresectable at the time of diagnosis because of advanced tumors or underlying disease.[3{EN DASH}5] Furthermore, TACE is unfeasible in patients who have coexisting diseases, such as severe cirrhosis and renal failure, or patients who have an allergy to iodine; and PEI, PMC, and RFA are unsuitable for patients who have a bleeding tendency, large tumors, and unfavorable tumor location.[4{EN DASH}7] Hence, new treatment strategies are needed for such patients. At our institute, in the University of Tsukuba, proton beams have been used for the treatment of HCC since 1983, and we have confirmed that this treatment is applicable and effective for patients with HCC.[8{EN DASH}10] The current study is a retrospective review that was based on updated results from patients who were analyzed in our previous reports to determine whether proton beam therapy also was useful for patients who had HCC with limited treatment options. Because proton beam irradiation theoretically yields excellent dose localization to a

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Table 1

Patient and Tumor Characteristics

Characteristic	No. of patients
Total no. of patients	21
Gender	
{EM SPACE}Men	15
{EM SPACE}Women	6
Age, y	
{EM SPACE}Range	47{EN DASH}76
{EM SPACE}Median	60
ECOG performance status	
{EM SPACE}0	6
{EM SPACE}1	8
{EM SPACE}2	7
Etiology of cirrhosis	
{EM SPACE}HBV	2
{EM SPACE}HCV	17
{EM SPACE}Unknown	2
Child{EN DASH}Pugh classification	
{EM SPACE}Class A	6

Image (4 Kb gif) Image (23 Kb jpeg) Image (73 Kb jpeg)	**Figure 1** Isodose distributions of the anterior and right lateral proton beams in a patient with hepatocellular carcinoma. Each isodose line corresponds to 90%, 50%, 30%, and 10% dose levels from the inside out, respectively. The intrahepatic high{HYPHEN}density region on the left edge of the target corresponds to an implanted metallic fiducial marker. Critical organs, such as the spinal cord and organs of the digestive tract, are located entirely outside of the irradiated volume because of the sharp distal fall{HYPHEN}off of the Bragg peak of proton beams.
Image (8 Kb gif) Image (30 Kb jpeg)	**Figure 2** These are contrast{HYPHEN}enhanced magnetic resonance images in the arterial phase from a patient with hepatocellular carcinoma. (A) In this image just before the initiation of proton beam therapy, the arrowheads represent the position of the hepatic tumor with early enhancement. (B) This image, which was taken 16 months after the completion of proton beam therapy, shows the disappearance of the hepatic tumor with early enhancement.
Image (2 Kb gif) Image (11 Kb jpeg) Image (26 Kb jpeg)	**Figure 3** Primary site{HYPHEN}control and disease{HYPHEN}free rates are illustrated for all patients who received proton beam therapy. Numbers in the graph indicate the number of patients who were at risk at each time point (Kaplan{EN DASH}Meier curves).