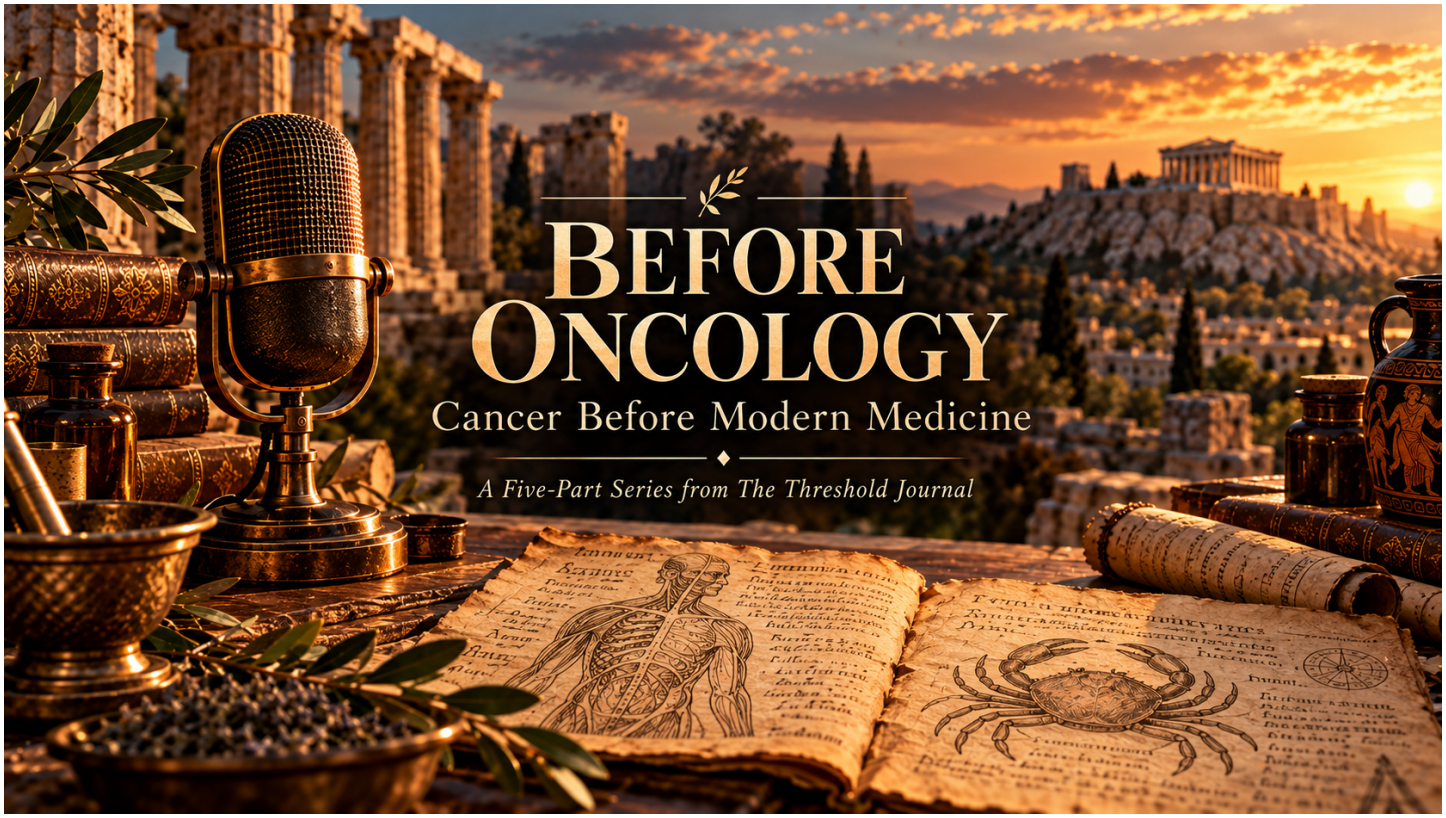

BEFORE ONCOLOGY

Cancer Before Modern Medicine

COMPLETE WRITTEN COLLECTION

A five-part historical video essay and podcast series from **The Threshold Journal**.

Historical and educational material only. This collection does not provide medical advice, diagnosis, or treatment recommendations.

About This Collection

Before Oncology explores how physicians across ancient Egypt, Greece, Rome, and the medieval Islamic world observed, named, and treated diseases associated with cancer long before modern oncology existed. The series avoids two equal distortions: dismissing premodern medicine as mere superstition, and turning ancient physicians into modern oncologists before their time. Its central distinction is simple: a physician can possess an incorrect theory and still make an accurate observation.

Contents

1. Before Cancer Had a Name - Hippocrates and the Crab
2. Celsus - When the Crab Became Cancer
3. Al-Razi - Cancer in the Medieval Clinic
4. Al-Zahrawi and Avicenna - The Knife, the Fire, and the Limits of Treatment
5. What Did Ancient Physicians Really Know About Cancer?

"They often misunderstood what cancer was - but sometimes saw clearly what cancer did."

EPISODE 1

Before Cancer Had a Name - Hippocrates and the Crab

Cancer did not begin when humanity learned its name.

Long before anyone understood cells, genes, or malignant transformation, human beings encountered bodies that developed unexplained masses - swellings that grew, hardened, ulcerated, returned, and sometimes killed.

The history of cancer therefore begins not with discovery, but with recognition.

Someone noticed that something was wrong.

And someone tried to describe what they saw.

One of the earliest surviving written descriptions often associated with cancer comes from ancient Egypt.

The Edwin Smith Papyrus, preserved in a later copy but reflecting much older medical traditions, describes cases involving tumors of the breast.

The writer observed physical characteristics, examined the patient, considered whether treatment was possible, and in at least one case reached a stark conclusion:

there was no effective treatment to offer.

This was not oncology.

There was no concept of cancer as a disease of abnormal cells.

There was no microscope.

No biopsy.

No pathology laboratory.

But there was observation.

A physician could touch a swelling, notice whether it was hard or soft, observe whether it changed over time, and remember what had happened to previous patients with similar conditions.

That kind of memory became one of medicine's earliest instruments.

Centuries later, in the Greek world, a new vocabulary appeared.

The medical tradition associated with Hippocrates used words derived from *karkinos* - the Greek word for crab - in descriptions of certain tumors.

Why a crab?

The answer is less straightforward than popular retellings sometimes suggest.

The image may have evoked the shape of a tumor with vessels or extensions radiating outward.

It may also have captured something about the way the disease seemed to grip the body.

Whatever the exact visual association, the metaphor endured.

A creature became a disease.

And a word crossed more than two thousand years of medical history.

But the Hippocratic physicians were not simply naming lumps.

They were trying to place disease inside a larger explanation of the body.

Some Hippocratic medical writings explained health and disease through the balance of bodily fluids, or humors.

Blood.

Phlegm.

Yellow bile.

Black bile.

But this was not yet one single, universally accepted medical system.

The four-humor model became far more influential in later Greek medicine, especially through Galen.

In that later tradition, cancer came to be associated particularly with black bile.

From our perspective, this explanation is wrong.

Cancer is not produced by an accumulation of black bile.

But historical medicine becomes much more interesting when we resist the temptation to divide the past into people who were simply right and people who were simply wrong.

A physician can possess an incorrect theory and still make an accurate observation.

That distinction will become central throughout this series.

Imagine a physician examining a patient more than two thousand years ago.

He cannot see beneath the skin except through touch.

He cannot examine cells.

He cannot order imaging.

He cannot identify a mutation.

He has no anesthesia suitable for major surgery.

No antibiotics.

No modern control of bleeding.

And no understanding of sterile technique.

His world is radically different from ours.

Yet he can still ask questions.

Is the mass growing?

Is it painful?

Has the skin changed?

Is the lesion ulcerated?

Can it be removed?

Will intervention help?

Or will it cause more suffering?

These questions sound surprisingly familiar.

The answers, however, were constrained by the medicine of the time.

Surgery in antiquity could be extraordinarily dangerous.

Pain alone placed severe limits on what could be attempted.

Bleeding and infection could transform an operation into a fatal event.

This helps explain why ancient physicians sometimes approached difficult tumors with a caution that can sound remarkably modern when removed from its historical setting.

But we must be careful.

They were not practicing modern cancer surgery.

They did not know about surgical margins in the contemporary pathological sense.

They did not possess a modern concept of metastasis.

And they could not reliably distinguish the many diseases that we now classify as entirely different cancers.

The word cancer today refers not to one disease, but to a vast family of diseases defined through cellular and molecular biology.

The ancient physician had none of that.

What he had was the surface of the body.

The patient's story.

His hands.

And experience.

That makes the history more remarkable, not less.

Because the intellectual problem was enormous.

How do you classify a disease when you cannot see its mechanism?

How do you decide when treatment is worse than the illness?

How do you learn from patients whose bodies cannot reveal their secrets until it is too late?

Those questions moved from Greek medicine into Roman medicine.

And there, the crab received the name by which much of the world would eventually know it.

The Roman writer Aulus Cornelius Celsus lived around the beginning of the Common Era.

In his work *De Medicina*, he preserved and organized a vast body of medical knowledge.

When Greek medicine spoke of the crab, Celsus used the Latin word:

cancer.

But Celsus did something more interesting than translate a name.

He described what he believed to be a progression of disease.

He discussed which lesions might still be treated - and which he warned could become more dangerous when treated aggressively.

That is where the history of cancer becomes uncomfortable.

Because Celsus encountered a problem medicine still recognizes in a completely different scientific framework:

Not everything that can be treated should be treated in the same way.

And intervention itself can cause harm.

In the next episode, we enter *De Medicina* and examine exactly what Celsus said.

Not the legend.

Not the modern paraphrase.

But the clinical problem he was actually trying to solve.

Before Oncology continues with Celsus - and the moment the Greek crab became the Latin cancer.

If you value careful history beyond easy myths, subscribe to The Threshold Journal.

EPISODE 2

Celsus - When the Crab Became Cancer

Somewhere between Greek medicine and the Roman world, a crab changed languages.

The Greek *karkinos* became the Latin *cancer*.

And the word survived.

Nearly two thousand years later, physicians still use descendants of that vocabulary every day.

But Aulus Cornelius Celsus matters for more than a word.

His surviving medical work, *De Medicina*, gives us something much more valuable:

a glimpse into how an educated Roman medical writer understood the limits of treatment.

Celsus probably wrote during the first century of the Common Era.

His work covered diet, drugs, disease, wounds, and surgery.

And within Book Five appears a passage that has attracted enormous attention from historians of cancer.

Celsus describes a sequence.

First comes a condition the Greeks called *cacoethes*.

Then, according to his account, may come a non-ulcerated carcinoma.

Then ulceration.

The vocabulary is ancient, and we should resist the temptation to translate this sequence directly into modern cancer staging.

Cacoethes was not Stage One cancer.

Celsus had no microscopic diagnosis, no TNM classification, and no concept of precancer in the modern pathological sense.

But he was trying to distinguish lesions by behavior.

And that distinction mattered because treatment could have very different consequences.

Celsus believed the earliest type - the *cacoethes* - might sometimes be removed.

But when the disease had progressed into what he regarded as carcinoma, his description became far more pessimistic.

He reports that physicians had tried caustic medicines.

They had tried burning the lesion.

They had cut tumors away with the scalpel.

And he reports something disturbing.

In some cases, aggressive treatment appeared to be followed by renewed growth, worsening disease, or death.

Even after a lesion had been removed and a scar had formed, Celsus wrote that the disease could return.

That sentence deserves attention.

Not because Celsus had discovered the biological mechanism of recurrence.

He had not.

But because recurrence itself was visible.

A surgeon did not need a microscope to notice that a mass had disappeared after an operation and later returned.

This is one of the most important themes in the history of medicine.

Observation can arrive long before explanation.

You can see rain before you understand meteorology.

You can observe infection before you discover bacteria.

And you can witness a tumor return before you understand malignant cells.

Celsus faced another problem.

How could the physician know which lesion was still treatable?

His answer was humbling.

Experience.

Time.

Repeated observation.

That answer reveals both the strength and the weakness of ancient medicine.

The strength was empirical memory.

The physician learned by comparing one patient with another.

The weakness was the absence of the diagnostic tools that would later transform medicine.

Two swellings might look nearly identical to the naked eye while being biologically very different.

One could remain local.

Another could invade.

One could be benign.

Another malignant.

One could be an inflammatory mass rather than a tumor at all.

Celsus had no pathology report to settle the question.

So when he warned against violent treatment in certain advanced lesions, we should not turn him into a modern oncologist trapped in Roman clothing.

His framework remained ancient.

His diagnostic categories were not ours.

His therapies could be painful and dangerous.

Yet within that unfamiliar medical world was a recognizable ethical problem.

When does intervention become futile?

When can the attempt to cure cause more harm than the disease itself?

Modern medicine answers those questions using evidence that Celsus could never have imagined.

Imaging.

Histopathology.

Molecular classification.

Anesthesia.

Antisepsis.

Blood transfusion.

Radiotherapy.

Systemic therapy.

But the question itself is older.

There is another danger in reading Celsus too enthusiastically.

Modern readers sometimes claim that he somehow anticipated contemporary surgical margins or modern oncological staging.

That goes too far.

A modern surgeon speaks of margins because a pathologist can examine tissue microscopically and determine whether malignant cells reach the edge of a specimen.

Celsus knew nothing of cells.

He could not have understood an R-zero, R-one, or R-two resection.

Those are modern concepts built on modern pathology.

What Celsus possessed was something more elementary:

an awareness that some disease could be locally removed...

and that some disease seemed to resist removal.

That difference is historically important enough without exaggeration.

It also tells us something about the relationship between theory and practice.

Celsus inherited medicine shaped by Greek ideas about humors.

The theoretical explanation of cancer was wrong.

Yet some of the clinical observations were real.

Tumors can recur.

Some become ulcerated.

Some become locally destructive.

Some are operable while others are not.

And surgery can fail.

The Roman medical writer did not need to understand DNA to encounter these realities.

He only needed patients.

For centuries, this tension would remain.

Doctors would continue to explain cancer through humors.

They would associate it with black bile.

They would use medicines designed to alter bodily balance.

They would cauterize.

They would excise.

And they would repeatedly confront the limits of what their techniques could accomplish.

Then the medical inheritance of Greece and Rome moved into another intellectual world.

Greek medical writings were translated, studied, questioned, reorganized, and expanded in Arabic.

Hospitals became major centers of clinical medicine.

And among the physicians working within that tradition was one of the most formidable observers of the medieval world:

Abu Bakr Muhammad ibn Zakariya al-Razi.

Known in Latin Europe as Rhazes.

Al-Razi did not simply preserve older medicine.

His surviving notes reveal a physician willing to compare authorities with what he himself saw in patients.

And among those observations were cancers.

Tumors of the breast.

The eye.

The nose.

Internal organs.

Questions about surgery.

Questions about pain.

Questions about when medicine should stop trying to remove a disease and instead attempt to reduce suffering.

More than eight centuries after Celsus, the clinical problem remained.

But the archive had grown.

In the next episode, we enter the world of *al-Hawi* - one of the great medical compilations associated with al-Razi.

And we ask a deceptively simple question:

What could a medieval physician know about cancer when the body was still largely invisible?

This is Before Oncology, from The Threshold Journal.

EPISODE 3

Al-Razi - Cancer in the Medieval Clinic

A physician examines a patient.

He touches a hard mass.

He studies its color.

He asks whether it hurts.

He considers where it is located, whether it is growing, whether it can be reached, and what happened when similar patients were treated before.

There is no microscope in the room.

There is no pathology laboratory.

No CT scan.

No anesthesia as we know it.

The physician is Abu Bakr Muhammad ibn Zakariya al-Razi.

In Latin Europe, he would become known as Rhazes.

He lived across the ninth and early tenth centuries and became one of the most influential physicians associated with the medical culture of the Islamic world.

Al-Razi worked within a tradition deeply indebted to Greek medicine.

Hippocrates.

Galen.

And generations of later commentators.

But describing him simply as a transmitter of Greek knowledge misses something important.

Al-Razi repeatedly valued clinical experience.

He compared authorities.

He recorded cases.

And his notes sometimes record disagreement with earlier authorities on the basis of what he observed in patients.

The enormous work known as *Kitab al-Hawi fi al-Tibb* - the Comprehensive Book on Medicine - gives us remarkable access to this world.

But there is an important historical qualification.

Al-Hawi was not a polished encyclopedia written from beginning to end and personally prepared by al-Razi for publication.

Evidence indicates that it was assembled after his death from his medical notes, excerpts, observations, and working files.

That fact makes the work, in some ways, even more interesting.

We are looking not simply at a textbook.

We are looking into the working archive of a physician.

The pages bring together earlier authorities and clinical comments associated with al-Razi's own experience.

And among the conditions discussed are diseases that later historians identify within the history of cancer.

The Arabic term was *saratan* - a word used for both the crab and the disease.

The animal metaphor had crossed another linguistic frontier.

Descriptions preserved in the medieval medical tradition speak of hard masses, unusual shapes, changes in color, surrounding vessels, ulceration, pain, and tumors affecting different parts of the body.

Again, caution is essential.

When a medieval text uses the word *saratan*, we cannot automatically assume that every case would receive the same diagnosis from a modern oncologist.

Without histology, different diseases could fall beneath a single descriptive category.

But al-Razi and later physicians were clearly attempting to distinguish dangerous tumors from other swellings.

And they were asking what could be done.

The answer was often shaped by location.

A superficial growth was one problem.

A lesion deep within the body was another.

If a tumor lay deep within the body or could not be safely removed, some medical texts advised against manipulating it because intervention could increase suffering without eliminating the disease.

That concern appears repeatedly in historical discussions of cancer in medieval medicine.

It would be tempting to say:

Al-Razi had discovered modern surgical oncology.

But that would distort the history.

He had not.

His explanation of cancer remained tied to humoral medicine, particularly the idea of abnormal black bile.

He did not know about DNA.

He did not know that cancers arise from altered cells.

He had no concept of immune surveillance, oncogenes, tumor suppressor genes, or molecular metastasis.

And yet, within that incorrect biological theory, he could still observe that the behavior of a tumor mattered.

Where was it?

How extensive was it?

Could it be reached?

Would cutting it relieve the patient...

or merely add another injury?

That last question is especially important.

Medicine is not only the science of doing things.

It is also the discipline of knowing when not to do them.

Modern medicine frames versions of this problem through risk-benefit assessment, clinical indication, proportionality, and questions of futility.

Al-Razi used none of that vocabulary.

But the underlying human problem existed.

A patient is suffering.

A treatment is available.

The treatment itself is dangerous.

And certainty is impossible.

What should the physician do?

This is where the history of cancer becomes a history of medical ethics as well as medical science.

Al-Razi's medical world also reminds us that Islamic medicine was not a sealed cultural category.

It drew on Greek, Syriac, Persian, Indian, and other traditions.

Texts moved.

Words moved.

Methods moved.

Arguments moved.

And physicians added their own experiences to inherited knowledge.

Al-Hawi itself contains material drawn from many earlier writers alongside clinical comments associated with al-Razi.

Centuries later, it would be translated into Latin as the *Continens* and become part of European medical learning.

Knowledge was not traveling in a straight line from one civilization to another.

It was circulating.

Being translated.

Corrected.

Misunderstood.

Preserved.

Rewritten.

And used again.

That matters for our story because cancer became one of those enduring clinical puzzles.

The Greeks had named the crab.

Celsus had translated it.

Al-Razi and physicians working in Arabic continued to classify and treat it.

But the fundamental problem remained unsolved.

They could see the tumor.

They could sometimes remove it.

They could watch it return.

They could observe a patient decline.

But they could not see the cellular process producing the disease.

The inside of cancer remained hidden.

And so medicine concentrated on what was visible.

Growth.

Pain.

Color.

Hardness.

Ulceration.

Location.

And response to treatment.

There is something intellectually powerful about this.

We often imagine scientific progress as a series of brilliant discoveries.

But much of medicine advances more slowly.

Someone notices a pattern.

Another person records it.

A later physician disagrees.

A treatment fails.

The failure is remembered.

A new distinction is created.

And slowly, almost painfully, the map becomes clearer.

Al-Razi stands in that history not because he discovered cancer.

He did not.

But because his medical archive shows how seriously physicians could study disease even when the theoretical tools needed to explain it did not yet exist.

And the story was about to become even more surgical.

Within a century, an Andalusian surgeon named al-Zahrawi would describe procedures for tumors that could be reached and removed.

And Ibn Sina - Avicenna - would give cancer its own place within one of the most influential medical works ever written.

They would inherit the same paradox.

Cut too little, and the disease may remain.

Cut aggressively, and the patient may suffer terribly.

Do nothing, and the disease may progress.

There was no easy answer.

There still is not always one.

In the next episode of Before Oncology, we move from al-Razi's clinical archive to the surgeon's knife.

Al-Zahrawi.

Avicenna.

Excision.

Cautery.

And the terrifying limits of medieval surgery.

Subscribe to The Threshold Journal for the next chapter.

EPISODE 4

Al-Zahrawi and Avicenna - The Knife, the Fire, and the Limits of Treatment

A surgeon prepares to operate.

Imagine undergoing cancer surgery a thousand years ago.

There is no modern general anesthesia.

No blood transfusion.

No modern antisepsis.

No antibiotics.

No pathology report.

No intensive care unit waiting if something goes wrong.

The surgeon has his hands, his instruments, heated instruments for cautery, and experience.

Under those conditions, the decision to operate was not simply technical.

It was existential.

In the tenth and eleventh centuries, two physicians became especially important to the history of this question.

Al-Zahrawi, the great surgeon of al-Andalus.

And Ibn Sina, known in the Latin West as Avicenna.

They belonged to different regions and intellectual environments.

But both inherited centuries of Greek and Arabic medical thinking about tumors.

And both confronted the problem that Celsus and al-Razi had already recognized:

Some tumors might be attacked.

Others might be better left alone.

Abu al-Qasim al-Zahrawi lived near Cordoba and produced the encyclopedic medical work *Kitab al-Tasrif*.

Its surgical section became famous.

Al-Zahrawi described instruments, operative procedures, cauterization, and the practical craft of surgery with unusual detail.

Among the conditions he discussed was cancer.

Recent historical analysis of his surgical text emphasizes a remarkably cautious pattern.

When a cancer was small, accessible, and located where it could potentially be removed completely, surgery might be attempted.

When the disease was old, large, deeply situated, or impossible to remove fully, the prognosis was far darker.

One of the striking features of al-Zahrawi's discussion is that he did not write like a man intoxicated by the power of surgery.

He understood failure.

He had either seen, or inherited knowledge of, operations that did not cure.

His writing contains warnings about using the knife against lesions that appeared cancerous when removal was unlikely to succeed.

This is important.

The history of surgery is sometimes told as a heroic story of increasingly bold intervention.

But good surgery has always required restraint.

A surgeon is defined not only by the ability to cut.

He is also defined by the judgment not to cut.

When al-Zahrawi described removable tumors, he stressed extensive removal rather than simply slicing away the most visible portion.

Modern readers immediately recognize an echo of oncological surgery.

But once again, we must keep our chronology straight.

Al-Zahrawi did not know the microscopic meaning of a surgical margin.

He could not examine cells at the edge of a specimen.

He could not distinguish microscopic residual disease.

What he understood was visible and tactile completeness.

If a dangerous growth was to be removed, leaving obvious diseased tissue behind was unlikely to solve the problem.

That is an empirical surgical principle, not modern pathology.

Then came Ibn Sina.

Born in 980, Ibn Sina became one of the most influential intellectual figures of the medieval world.

His *Canon of Medicine* would circulate for centuries in both Islamic and European medical education.

Cancer received sustained attention within this system.

Ibn Sina's theoretical explanation remained humoral.

Cancer was associated with abnormal black bile.

Again, biologically wrong.

But his clinical descriptions contain details that later physicians found recognizable.

He discussed hardness.

Gradual growth.

Color.

Pain.

Ulceration.

Anatomical location.

And the difficulty of treating advanced disease.

For tumors considered suitable for surgery, Ibn Sina described extensive removal of diseased tissue.

He also discussed cauterization in the treatment of cancer.

But he warned of the dangers of treatment when tumors approached sensitive or vital structures.

Here we reach one of the strangest moments in the story.

Historical studies of the *Canon* discuss a case in which a woman underwent removal of a diseased breast and later developed disease in the other breast.

Some modern authors have interpreted this as an extremely early observation relevant to metastatic cancer.

But we need to be precise.

Ibn Sina could not demonstrate metastasis in the modern biological sense.

He had no knowledge of malignant cells traveling through lymphatic or blood vessels.

The second breast lesion might also be interpreted in other ways from a modern perspective.

What matters historically is that physicians were observing recurrence and disease appearing at additional sites, and trying to explain what those events meant.

Once again:

Observation before mechanism.

This is the thread connecting our entire series.

Ancient and medieval physicians often possessed theories we now reject.

Four humors.

Black bile.

Qualities of hot, cold, wet, and dry.

But their patients had real diseases.

A malignant tumor in the year 1000 was biologically no less real because nobody understood DNA.

And when a physician repeatedly encountered those patients, patterns emerged.

Some tumors remained local for long periods.

Some ulcerated.

Some returned.

Some appeared in places impossible to operate on.

Some patients lived for years.

Others deteriorated rapidly.

Medicine tried to turn those observations into rules.

But those rules were limited by brutal realities.

Think again about surgery without modern anesthesia.

Think about the risk of hemorrhage.

Think about infection before germ theory.

Think about cutting into the breast or another vascular tissue with no modern control of postoperative pain.

The fact that surgeons operated at all is extraordinary.

The fact that some also warned against operating is equally significant.

And it raises an ethical question that transcends the medieval world.

What is the purpose of medicine when cure is impossible?

Is treatment justified simply because treatment exists?

Or must the physician sometimes exchange the ambition to cure for the responsibility to relieve suffering?

Ancient and medieval texts do not give us modern palliative medicine.

But they reveal the old human problem from which palliation eventually emerges.

There comes a point when medicine has to ask not only:

Can I intervene?

But:

What will this intervention do to this person?

That question brings us to the final episode.

Because after Egypt, Hippocrates, Celsus, al-Razi, al-Zahrawi, and Avicenna, we are left with a paradox.

These physicians misunderstood the biological cause of cancer.

And yet... some of their descriptions sound unsettlingly perceptive.

How should we judge them?

Were they astonishingly advanced?

Were they mostly wrong?

Did they somehow anticipate modern oncology?

Or... are we asking the wrong question?

The answer depends on understanding the difference between seeing a disease... and explaining it.

In the final episode of Before Oncology, we ask:

What did ancient physicians actually know about cancer?

This is The Threshold Journal.

EPISODE 5

What Did Ancient Physicians Really Know About Cancer?

After thousands of years of observation, one question remains.

What did ancient physicians actually know about cancer?

It is tempting to answer in one of two ways.

The first is dismissive.

They knew almost nothing.

They believed in humors.

They blamed black bile.

They had no microscopes.

No genetics.

No pathology.

Therefore, their medicine was simply primitive.

The second answer goes to the opposite extreme.

It turns ancient physicians into modern oncologists before their time.

Celsus becomes the inventor of cancer staging.

Al-Razi anticipates modern surgical oncology.

Avicenna discovers metastasis.

Al-Zahrawi invents modern surgical margins.

Both stories are misleading.

The truth is more interesting.

These physicians often misunderstood what cancer was.

But they sometimes observed very clearly what cancer did.

That distinction is the key to the entire history.

Consider what modern oncology knows.

Cancer is not one single disease.

It is a vast group of disorders in which cells acquire changes that allow abnormal survival, proliferation, invasion, and, in many cancers, dissemination to distant sites.

Tumors can be classified by tissue of origin.

By histology.

By molecular markers.

By genetic alterations.

By stage.

By response to therapy.

A modern diagnosis may involve imaging, biopsy, immunohistochemistry, genomic testing, and microscopic examination of surgical margins.

None of those diagnostic tools existed in the ancient world.

The concept of the cell itself would arrive many centuries later.

So when Hippocratic medicine described *karkinos*, or Celsus wrote *cancer*, they were not identifying a disease category identical to ours.

They were classifying visible and palpable phenomena.

A hard mass.

A growth.

An ulcer.

An abnormal swelling.

A lesion that returned.

A disease that resisted treatment.

The classification was phenomenological.

It was based on appearance and behavior.

And that is why some descriptions sound surprisingly familiar, while others remain impossible to map precisely onto modern diagnoses.

The ancients saw the outside of a process whose inner mechanism was hidden.

Imagine standing on a shore and watching waves.

You can learn a great deal without understanding the gravitational relationship between Earth and Moon.

You can recognize tides.

You can predict patterns.

You can notice storms.

But the mechanism remains invisible.

Ancient cancer medicine was something like that.

The first great achievement was recognition.

The Edwin Smith medical tradition shows that unusual breast masses were being systematically described thousands of years ago.

The second achievement was language.

Greek medicine gave certain tumors the image of the crab.

Celsus carried that image into Latin as *cancer*.

In Arabic medical writing, the term was *saratan* - a word also meaning crab.

Across languages, the metaphor survived because physicians kept encountering something worth naming.

The third achievement was behavioral observation.

Celsus described lesions that could return after removal and warned that aggressive treatment of certain advanced conditions appeared to make outcomes worse.

That was not a theory of malignant cell biology.

It was an observation of clinical failure.

Al-Razi's medical archive went further in collecting descriptions, differential considerations, prognostic observations, treatments, and discussions of when surgery might or might not be attempted.

His *al-Hawi* preserved earlier authorities but also clinical comments associated with his own experience.

Al-Zahrawi confronted the practical surgical problem.

If a tumor could be removed in an accessible location, surgery might be possible.

If it was too large, too old, too deeply situated, or impossible to eradicate visibly, intervention might offer little benefit.

His surviving surgical writing combines action with restraint.

Ibn Sina systematized cancer within a much larger medical framework.

He described clinical characteristics and discussed extensive excision for selected tumors, while recognizing the dangers of advanced or anatomically inaccessible disease.

But his causal theory remained humoral.

So were they right?

Sometimes observationally.

Not mechanistically.

And this matters because science is not a collection of correct sentences appearing suddenly in history.

Knowledge has layers.

There is observation.

Classification.

Prediction.

Mechanism.

Experiment.

Measurement.

And explanation.

A physician may succeed at one layer while failing at another.

Celsus could observe recurrence without understanding malignant cells.

Al-Razi could distinguish clinical patterns without knowing histology.

Al-Zahrawi could understand that incomplete visible removal was problematic without possessing microscopic pathology.

These are not modern discoveries hiding in ancient texts.

They are earlier forms of clinical knowledge.

The distinction protects us from two mistakes.

The first is arrogance.

We should not imagine that people before modern science were incapable of careful thought simply because their theories were wrong.

The second is romanticism.

We should not pretend that ancient medicine secretly possessed modern knowledge merely because a sentence sounds familiar.

Modern oncology required revolutions these physicians could never have anticipated:

anatomical pathology, the microscope, cell theory, anesthesia, antisepsis, modern surgery, radiology, radiotherapy, chemotherapy, immunology, molecular biology, genetics, and increasingly, therapies aimed at specific molecular vulnerabilities.

The difference between a medieval tumor description and modern oncology is enormous.

Yet the patient at the center of both worlds is recognizably human.

A person discovers a mass.

Fear begins.

The physician examines it.

Uncertainty follows.

Treatment may work.

It may fail.

The disease may return.

And eventually, the physician confronts the limits of medicine.

That part of the story has changed less than we sometimes imagine.

Perhaps this is why the old texts still matter.

Not because they can tell us how to treat cancer today.

They cannot, and they should never be used as substitutes for modern medical care.

They matter because they show us the long history of humans trying to understand suffering with the tools available to them.

They remind us that medicine begins before certainty.

A patient arrives before the explanation is complete.

A decision must often be made before knowledge is perfect.

And the physician must act, or choose not to act, under conditions of uncertainty.

The science has changed beyond recognition.

The responsibility has not disappeared.

There is one final irony.

For centuries, doctors could see cancer but could not see the cell.

Then microscopes transformed the scale of medicine.

Pathologists learned that tumors were made of abnormal cells.

Later, molecular biology moved the problem deeper again - into chromosomes, genes, signaling pathways, immune interactions, and mutations.

Each technological advance changed what it meant to see cancer.

The ancient physician saw a lump.

The nineteenth-century pathologist saw tissue.

The twentieth-century scientist saw the cell.

The modern researcher can see molecular alterations inside that cell.

And perhaps the history teaches us one more thing.

Every generation tends to believe that the level it can see is the final level.

History suggests caution.

There may always be another layer.

Cancer was never discovered in a single moment.

It was encountered.

Named.

Observed.

Misunderstood.

Cut.

Burned.

Feared.

Studied.

And slowly reinterpreted across civilizations and centuries.

From the Egyptian medical papyri...

to the Greek crab...

to Celsus's Latin *cancer*...

to al-Razi's clinical archive...

to the surgical writings of al-Zahrawi...

and the medical system of Ibn Sina...

the history of cancer is not the story of one discovery.

It is the history of learning how much we did not know.

And continuing anyway.

This has been Before Oncology: Cancer Before Modern Medicine.

A five-part series from The Threshold Journal.

If this series gave you a different way of seeing the history of medicine, subscribe and join us for the next journey across ideas, texts, and the human experience.

Historical Note & Disclaimer

This collection is an interpretive history of medicine. Ancient and medieval diagnostic categories do not map neatly onto modern histopathological diagnoses, and historical descriptions should not be treated as evidence that earlier physicians possessed modern concepts such as cellular malignancy, metastasis, molecular classification, or microscopic surgical margins.

Historical treatments discussed here are presented for educational purposes only. They are not recommendations for medical care and should never be used as substitutes for contemporary professional diagnosis or treatment.

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